French-Egyptian Centre for the Study of the Temples of Karnak
MSA-CNRS USR 3172

Activity report 2012

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FOREWORD

The work of the French-Egyptian Center for the Study of the Temples of Karnak in 2012 mostly took place on schedule and in accordance with the decisions of the Scientific Committee which took place in April 2012.

The MSA excavations led by M. Boraik continued in front of Karnak temple, especially on the northern area where huge Roman baths and a Ptolemaic settlement were uncovered. Numerous artefacts and much ceramic material was unearthed, that will give important data about this area.

Inside the temple, the activity of the Center was mainly devoted to two programmes, as an extension of work of the last season. The first concerns the study of the temple of Ptah. Reviews of the epigraphic facsimiles were completed but most activity centred on the excavation of the courtyard of the temple and of the western area (the first mud-brick enclosure wall and the southern gates of the XXVth Dynasty). The most important discovery, which had significant impact in the national and international press, was the discovery of parts of a gate bearing the name of king Sanakhtenre Ahmose, hitherto an obscure ruler of the Seventeenth Dynasty. The excavation inside the courtyard of the temple has also brought to light mud brick walls belonging to a monument prior to the one built by Thutmose III. A major conservation and restoration programme continued, particularly on the main gates of the temple and also on the walls of the courtyard and of the chapels. The courtyard was paved for visitors.

The second programme concentrated on the epigraphic recording of the Philip Arrhidaeus bark-shrine located in the central area of the temple of Amun-Re. The fieldwork for this is now finished and will require reviews to prepare the publication.

Archaeological and epigraphical fieldwork was led in the Treasury of Shabaka and on the Osirian chapels, with very important results.

Programmes of restoration and conservation were devoted to limestone blocks (especially those of the *Netery-menu* and of the gate of Senakhtenre) and the archaeological material excavated from the different sectors (temple of Ptah, Roman baths). At the entrance to the Open Air Museum, the reconstuction of the *Netery-Menu* of Thutmose III and Hatshepsut is now finished; a final cleaning will be necessary. The opening of this monument to visitors was announced by the Ministry of State for Antiquities at the beginning of February 2013.

Constant work has concerned the documentary database of Karnak, which was enhanced by the addition of new archives and the scanning of old glass plates kept at the CFEETK. The online Karnak bibliography provides more than 2.000 references about Karnak, with more than 1.000 papers and books which can be downloaded for free. A new programme of an online edition of all the hieroglyphic texts from Karnak (the Karnak project) started in September 2012, in cooperation with the University of Montpellier III (CNRS UMR 5140), which funds two post-doctorate fellows for this programme.

In addition to many papers, three books were published in 2012.

The CFEETK has worked to accommodate foreign missions working within the domain of Amun-Re by delivering work authorization, monitoring field activities and offering logistical and technical support (topography, photography…).

All the work led at Karnak has benefitted from the constant help of Ibrahim Soliman, MSA General Director, Amin Ammar, Director of Karnak, Abdel Satar Badri, Chief inspectors, Abd el-Nasser, Director of conservation, Tarek Milad Zikri, Chief architect of Upper Egypt, all the inspectors, the Raîs Mahmoud Farouk and the workers of the MSA. It is a pleasure to thank all of them for their kindly and constant support.

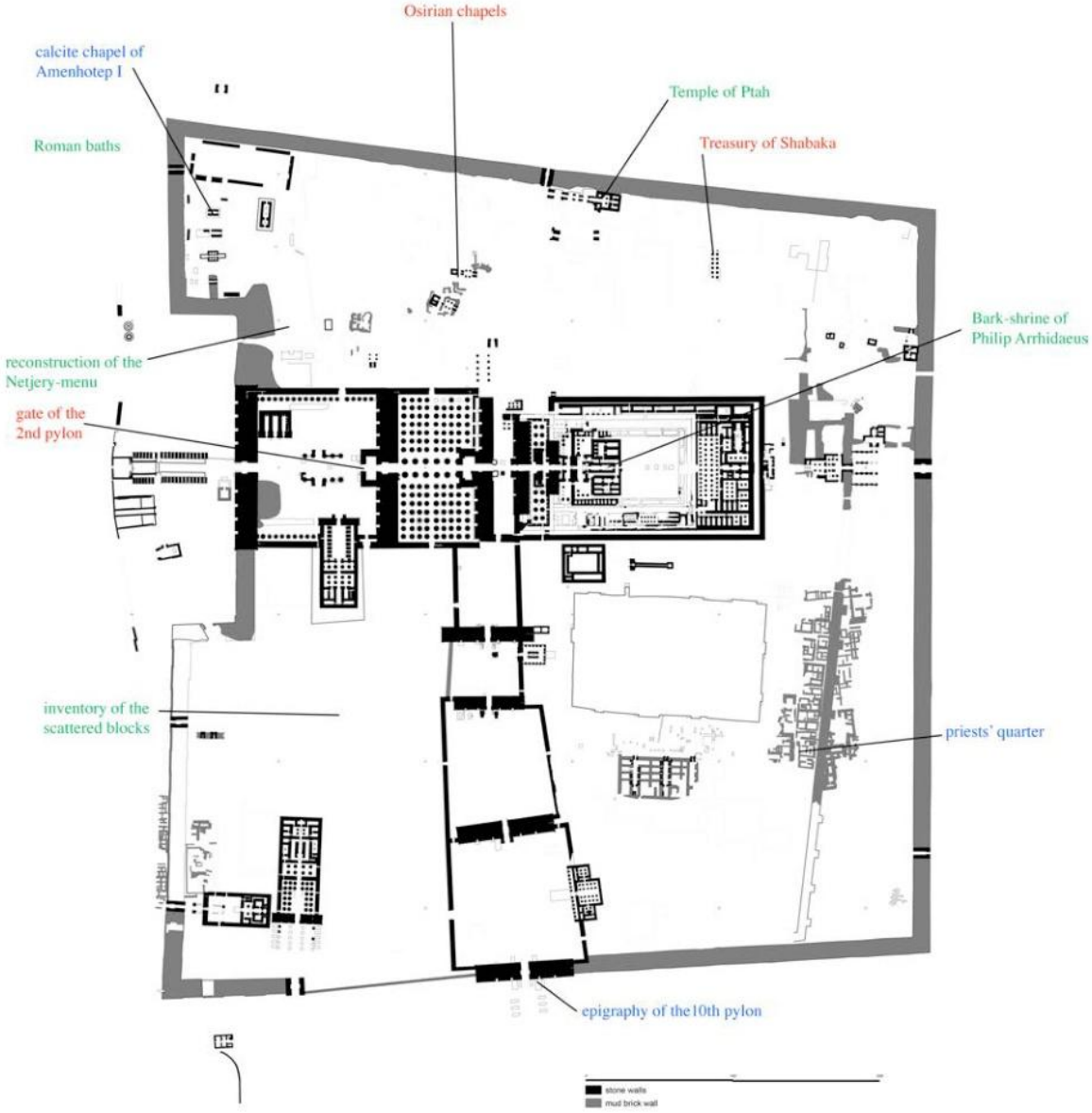
We would like to extend our grateful thanks to the French authorities of the *Centre National de la Recherche Scientifique* and of the *Ministère des Affaires Étrangères et Européennes* for their constant financial support and interest on the programmes led by the CFEETK.

We are always delighted with the excellent relationships between the French-Egyptian Centre for the Study of the Temples of Karnak and the *Ministry of State for Antiquities* led by H.E. the State Minister for Antiquities Pr. Dr. Mohammed Ibrahim Aly Sayed.

Mansour Boraik
General Director of Luxor and Upper Egypt (MSA)
Co-director of the CFEETK

Christophe Thiers
Director of the USR 3172 (CNRS)
Co-director of the CFEETK

Amun-Re temple, main fieldwork in 2012



temple of Ptah : main CFEETK projects
osirian chapels : projects hosted by CFEETK
central area : projects currently in publication

1. SCIENTIFIC PROGRAMMES

1.1. Excavations in front of Karnak Temple and at Luxor

1.1.1. The Roman Baths (M. Boraik)[1]

The excavations in front of the temple of Karnak focussed on the area to the north of the Roman bath, and completed the work on and the restoration of the bath itself.

General view of the northern part of the Roman baths.

General plan of the baths © S. El-Masekh, Th. Fournet, P. Piraud-Fournet, M. Vanpeene.

[1] With MSA Inspectors Salah El-Masekh Ahmed, Warda el Nagar Mohamed, Abeer Sayed Mohamed, Amira Fawzy Ali, Ahmed Mahmoud El-Taher, Mona Ali Abady, Aisha Mohamed Montaser, and Conservators Ahraf Mostafa Ali, Mona Salah Youssef, Mahmoud Samir Hussein.

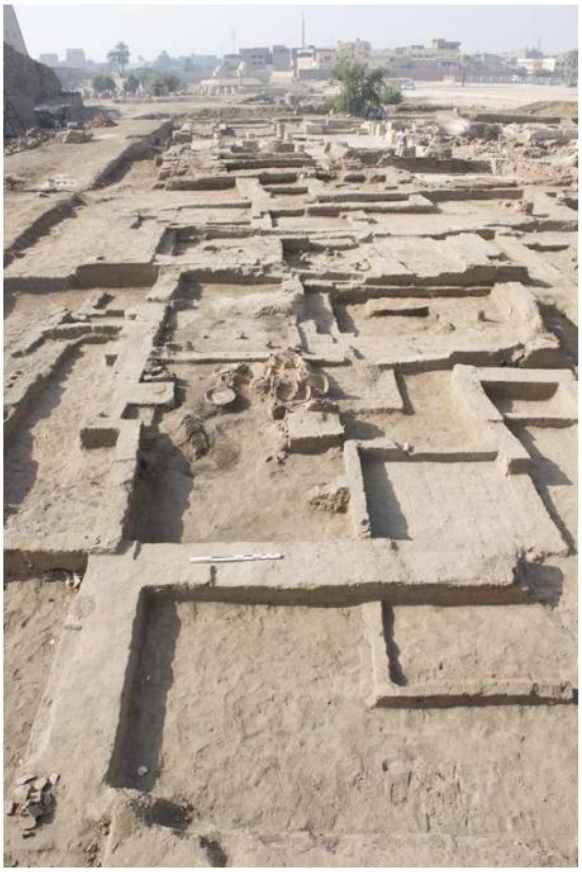
The excavations of the baths revealed the water supply. In the north-west of the baths, evidence has been found for the complex of the hydraulic system. A deep cylindrical well or tank, and another deep rectangular chamber were found. The latter housed a huge water-wheel or sakkia used to raise the water to some form of water-tower from which it could be distributed as required throughout the baths. To the east of the water supply, we found the latrines on the north side of the complex. These have a shallow channel for fresh water, and the deep sewer under the toilets themselves is very well preserved, but no trace has been found of stone toilet seats.

Rectangular chamber for a water-wheel.

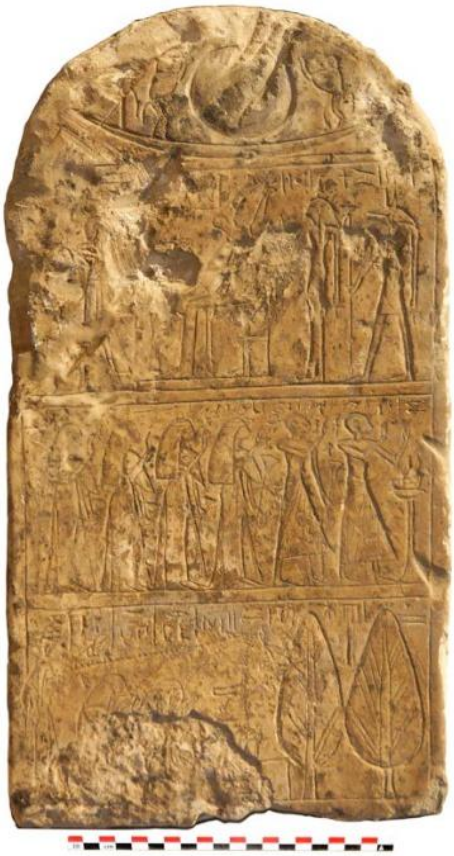
To the north of the baths complex, the excavations brought to light many mud brick structures dating to the late Ptolemaic period. Some of these rooms were probably used as shops in front of Karnak temple. Many rooms were discovered with intact content. A private limestone funerary stela was uncovered inside one of the rooms. The style and the design of this stela roughly indicate a New Kingdom date.

The work still continues in the restoration of the baths, and the study of the objects.

Moulds from Ptolemaic settlement © Cnrs-Cfeetk.



Area north to the Roman bath.



Funerary stela found inside a room.

Different kinds of objects uncovered north to the Roman Baths © Cnrs-Cfeetk.

Restoration of the heating chambers.

1.1.2. The Sphinx Avenue (M. Boraik)

The work was carried out this season in the second sector in front of Luxor Central. Two heads of sphinxes were found with four pedestals. Many Roman walls were revealed and the excavations were stopped after two months.

Sphinx Avenue at Luxor.

Nectanebo's sphinx heads.

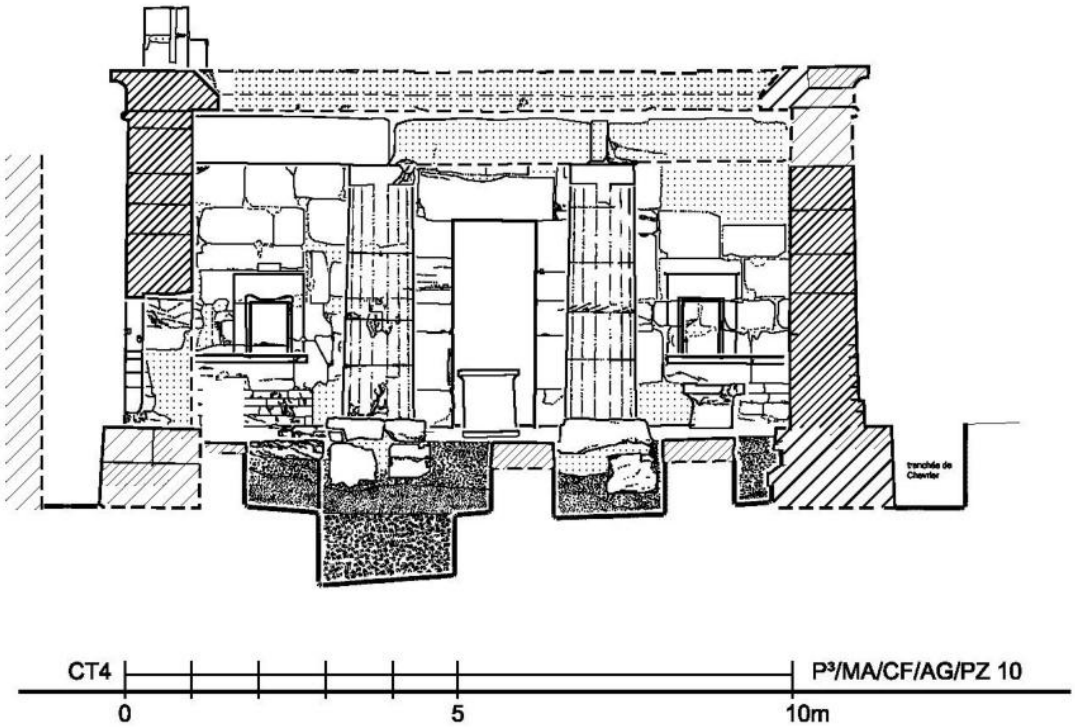
The site management work continued, with the lighting of two sectors: the first in front of Luxor temple and the second behind Luxor library. The light system was installed by the Sound & Light Company, using led lights.

Sphinx Avenue lighting behind Luxor library.

1.2. The northern area of the precinct of Amun

1.2.1. The temple of Ptah (Chr. Thiers, P. Zignani)[2]

The aims of this fourth field season were to pursue the excavations of the south-western area of the temple (enclosure wall of the first Ptolemaic gate and gate south to the temple), to excavate the courtyard as an extension of the excavations led inside the three chapels, to check and complete the epigraphic, architectural and photogaphic surveys and to develop the restoration and conservation programme of the temple (main gates and courtyard, enhancement of the monument with new flooring).



North-south Section accross the courtyard © Cnrs-Cfeetk.

[2] Members of this field season:

- epigraphic survey: Mamdouh Abd el-Ghassul (MSA-Cfeetk), Christophe Thiers (USR 3172, head of mission), Sébastien Biston-Moulin (USR 3172), Elizabeth Frood (Oxford), Kathryn Howley, Julia Troche (hieroglyphic and hieratic graffiti);
- architectural survey: Pierre Zignani (USR 3172), Mathieu Vanpeene, Pierre Tourvieille de Labrouhe (Cnrs), Marion Perot (Cnrs trainees), Vincent Tournadre (VI MAEE);
- excavation and ceramological study: Pierre Zignani, Lucie Amami, Marie-Caroline Livaditis (Cnrs trainees), Romain David (vacataire Cnrs), Catherine Defernez (UMR 8167), Stéphanie Boulet (FNRS-ULB), Mamdouh Abd el-Ghassul (Msa-Cfeetk), Chr. Thiers;
- photographic survey: Jean-François Gout (USR 3172), Laura Moulié (Cnrs trainee), Karima Dowi Abd al-Radi, Ahmed Roubi, Mohamed Saïdi (Msa-Cfeetk);
- conservation-restoration: Lucie Pieri (VI MAEE), Abdou Qoraïm (Msa-Cfeetk), Mohamed Zaki (Mea-Cfeetk), Marlène Roca (Cnrs trainee), Agnès Asperti, Anne-Claire Hauduroy (Cnrs-Cfeetk), Mohammed Zaki Masoud, Adel Mohamad Radouan, Ghaad Nubi Hussein, Ahmed Hassan Fuli, Waffaa Abo El Hamed, Nagwa Abd El-Ghafour, Yasser Farraj, Abdelnasser Mahmoud, Mahmoud Said Ahmed (Msa-Cfeetk);
- MSA inspectors: Oussama Mohmed Moustafa, Mohamed Abd el-Khalek Amin, Wahid Youssef Belal, Sheima Mamdouh.

Excavation of the courtyard (**P. Zignani, Chr. Thiers**)

Before starting the excavation of this area, it was necessary to remove the mortar put down by G. Legrain to protect the floor. To allow access to the chapels, the area of the courtyard was divided in two parts on both sides of the longitudinal axis of the temple: a northern area and southern area. This work brought to light earlier mud brick structures built before the temple of Tuthmosis III; some elements had been identified last season inside the chapels.

Northern area

The clearing of the surface covered by the modern concrete floor enabled the discovery of three huge slabs, constituting the original flooring of the courtyard and portico. These monoliths have the same measurements as the slabs discovered last season inside the three chapels, but two are of limestone and one in sandstone. All of of them have more or less significant deterioration of their surfaces, and bear tool marks. The sandstone slab is located north to the base of the northern column of the court. A similar fragment was also found in an excavation backfill made by G. Legrain when restoring the missing steps of the stairway. This pit reached the foundation sand of the Tuthmoside courtyard.

View of the north-western part of the courtyard: (a) limestone slab with zenithal opening, (b) sandstone slab (c), part of the second hand flooring © Cnrs-Cfeetk.

The two limestone bearing slabs are located to the east and west at the bottom of the walls bounding the courtyard. The limestone block to the west has been resized on these west and north sides, to reserve a place for a secondary sandstone paving. A quadrangular opening was cut through the block, ten centimeters from the eastern edge of the slab. Its four sides present a pyramidal shape. It seems that this is a zenithal window for natural lighting, although its position in the body of the slab is not usual. Indeed, this kind of lighting is usually cut in a joint between two bearing slabs. The lower surface which has been partially seen, shows the smoothness of a ceiling.

Wall M4 (740) beneath the limestone foundation (reused blocks of Hatshepsut) of the north wall of the courtyard and its flooring slab © Cnrs-Cfeetk/L. Moulié.

Two areas without any flooring slabs allowed us to investigate the foundation of the temple. A survey along the northern wall of the portico allowed the discovery of two limestone blocks reused in the foundation and bearing the names of Hatshepsut. Excavation of the ancient foundation pit has reached the remains of a mud brick wall (M4 = 740) running east-west, unrelated to the general direction of the sanctuary. The southern side of this wall was totally cut by the foundation pit of the courtyard, and filled with river sand. At 1.82 m long and 1.17 m high, this massive wall (brick 35 x 18 x 8/10 cm) must to be linked with similar elements found inside the chapels last year and one can note that it is precisely the extension of the wall M2 identified in the northern chapel. This wall had been built on a layer (1.5 / 2 cm) of muna which leveled a layer with charcoal and ceramic material (altitude of foundation: 73.83 m). The rare ceramic elements associated with the wall (joint filling and inside the bricks) are dated to the late seventeenth and early eighteenth dynasty (see below). This wall was then partially destroyed by the implantation of a north-south wall (742), highlighted beneath the slab with the light opening.

While following this huge wall to the east on the plan and joining the remains uncovered in the northern chapel (wall M2), a survey was also continued out of the temple, at the bottom of its eastern outer wall. By cleaning the bottom of the trench once dug by H. Chevrier, it was possible to find the extension (M5 = 901) of wall M2, which had at its end a perpendicular north-south wall (M6 = 902), disappearing under the precinct wall of the Thirtieth Dynasty and extending southward. The bricks clearly appeared after the removal of a thick layer of muna corresponding to a horizontal joint between two layers of bricks. The southwest corner of the brick wall was cut to insert a limestone foundation

block of for the temple. Two holes were also cut into the bricks, probably during the construction of the temple. The foundation trench on the north side of wall 902 is full of pottery sherds, and a mostly complete vase seems to date to the late seventeenth and early eighteenth dynasty.

It is still too early to determine the nature of the building destroyed during the excavation of the foundation pit of the temple of Ptah by Tuthmosis III. One can note, however, that these remains, earlier than the temple of Tuthmosis III, seem to have a similar orientation to that of the Amun temple.

The link with the limestone blocks belonging to gates bearing the names of Tuthmosis III and Hatshepsut dedicated to Amun-Re, which had been re-used in the first layer of foundation, is attractive in light of the inherent economy in destroying a monument and reusing elements on site, but cannot yet be determined.

Mud brick walls (901 et 902) destroyed by the Tuthmosis III's Temple © Cnrs-Cfeetk/Chr. Thiers.

Location of the mud brick walls.

Foundation trench (905) of the wall 901 © Cnrs-Cfeetk/Chr. Thiers.

Southern area

In this area, clearing has also highlighted four huge limestone ceiling slabs reused as pavement, similar to those of the northern area.

South-western area of the courtyard © Cnrs-Cfeetk/P. Zignani.

All of them show degradations of the surface and tool marks. Three slabs are lying around the southern column, on its north, south and east sides. The fourth one is lying close to the west wall of the courtyard. This slab and the southern one present a side with cavetto cornice.

Long side of the sourthern slab bearing cavetto cornice © Cnrs-Cfeetk.

The southern slab with architectural feature on its western side © Cnrs-Cfeetk.

On the southern slab, one can observe the presence of details of grooving on rising joints; this feature was already seen on a slab inside the chapels last season. This kind of recess band was also used for the assembly of the elements of roofing of the White Chapel.

Here again, the spaces between the slabs were excavated to better understand the foundation work of the temple. The work of consolidation and restoration led by G. Legrain greatly disturbed the upper layers, and a sandstone block decorated with painted relief was uncovered: it bears the head of a pharaoh and belongs to the south part of the main wall of the portico, showing a scene with Tuthmosis III making an offering to Amun and Ptah. This block has been inventoried and stored and awaits restoration (see below).

Excavations of the southwestern area (P. Zignani)

Investigations which had clarified the layout of the western area of the temenos of Ptah continued within the last Ptolemaic enclosure wall. The initial goal was to understand the development of the temple of Ptah through the millennium and a half of its use, without neglecting to survey the very limited remains belonging to post Pharaonic periods, which were often badly considered or destroyed by the first excavators.

Plan of Ptah temple area (2012) © Cnrs/Cfeetk.

This season's excavation within the southwestern corner of the first precinct wall started directly on Ptolemaic levels, disturbed by secondary settlement. The area was certainly used to extract organic soil because these first levels are badly preserved. Nevertheless it was possible to record remains of a working area (ovens, silos) of the Ptolemaic period but only with a few first layers of walls. Thus we do not have complete spaces. Secondary pits show that the land was also disrupted by later occupation.

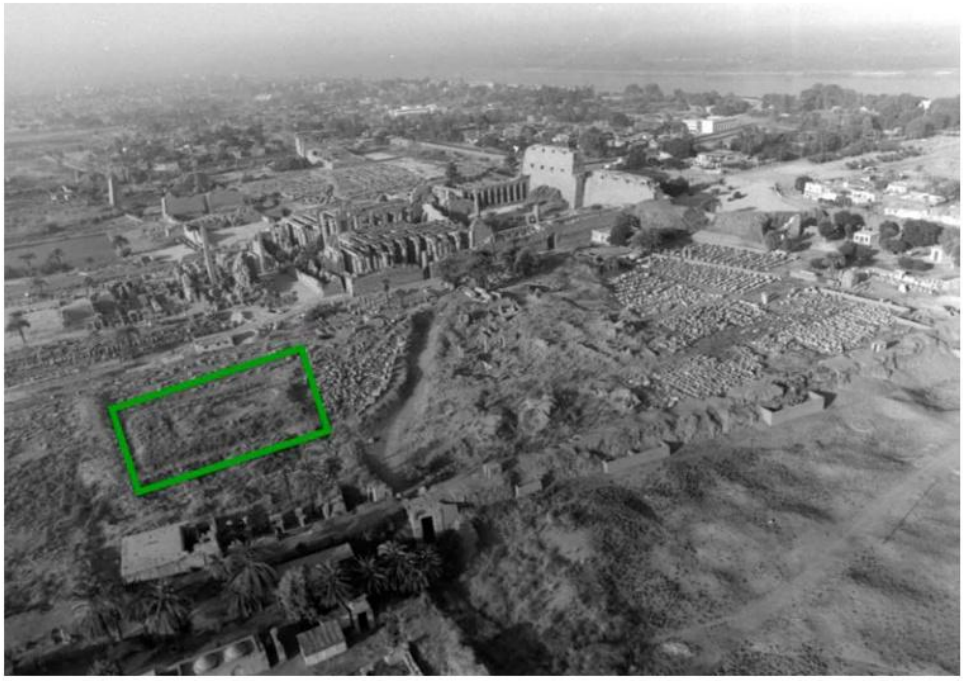
Southwestern area of the Ptah temple. Southwestern corner of the first Ptolemaic precinct wall © Cnrs-Cfeetk/J.-Fr. Gout.

The use of sloping terracotta plaques protecting the bottom of a wall was also noted. J. Lauffray, who unfairly calls them orthostats (they are raised with an important inclination), found them at the bottom of the New Kingdom enclosure wall southeast of the Sacred Lake. More recently, such an arrangement was observed at the bottom of the enclosure wall of the chapel of Osiris Wennefer Neb-djefau.

Some of these investigations have been extended to the southern part of the massive wall corresponding to the first gate of Shabaka. This wall was probably the western limit of the temenos of the Ptah temple during the XXVth dynasty. The southern gate with two black granite column bases in

front of it belongs to the same enclosure wall, and the excavation shows that this wall was running southward to the New Kingdom temenos of the Amun temple (see fig. below). The XXVth dynasty wall was cut by a quadrangular mud brick building, still unpublished, but perfectly identifiable on aerial photographs, and it was also destroyed by the Ptolemaic enclosure wall, the southern part of it being built alongside the quadrangular structure.

(a) enclosure wall of Shabaka, (b) quadrangular structure, (c) Ptolemaic enclosure wall, (d) secondary settlement on the wall of Shabaka © Cnrs-Cfeetk/P. Zignani.



Quadrangular structure south of the Ptah temple © Cnrs-Cfeetk.

Different indices lead us to believe that a major development project in the area between the temenos of Montu and Amun was made during the reign of Shabaka. South of the temple of Ptah, a

topographical survey allows the axis of the two XXVth dynasty gates to be linked to the main axis of the Treasury of Shabaka which is currently being excavated by Nadia Licitra.

We can thus hypothesize that Shabaka had organized the northern area of the temple of Amun, including the temple of Ptah, in a composition whereby the Treasury of Shabaka was accessible from the west with an entrance on the "way of Ptah".

Axis between the two southern gates of the Ptah temple area and the Treasury of Shabaka © Cnrs-Cfeetk/Chr. Thiers.

During the documentation of the foundations of the gate preceded by the two black granite column bases, the masonry was recorded; it mainly consists of Amarna period talatats, sometimes decorated, and one of them retained the name of Nefertiti.

The archaeological investigations to understand better the chronology of the site (especially by studying pottery) led to a discovery that has attracted the attention of the international Egyptological community and media. An excavation to a depth of approximately 1.50 m close to the foundations of the first southern gate of the axis to the Treasury of Shabaka reached a level where two blocks (a doorjamb and part of the lintel) of a doorway in the name of the king Sanakht-en-Re Ahmes (see below) were lying. These are the only remains of a monument built in the name of this king of the seventeenth dynasty.

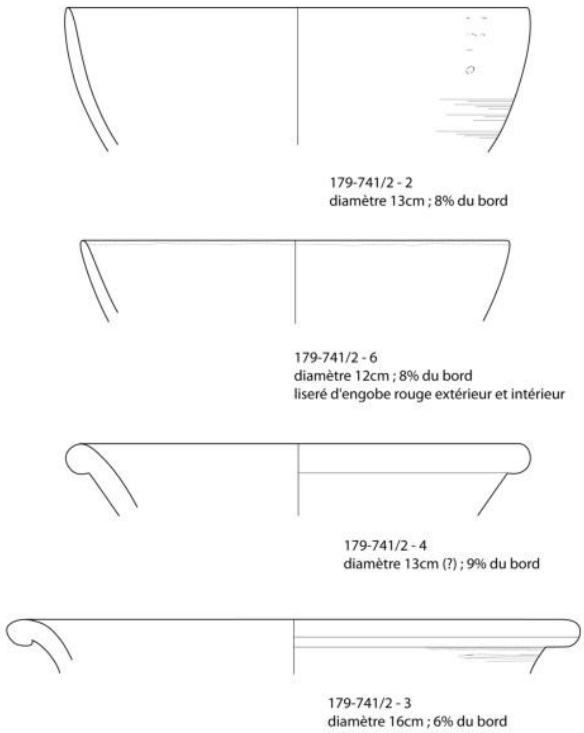
Pottery analysis (**C. Defernez, S. Boulet**)[3]

In February and September 2012, some ceramic analyses were perfomed on material from the excavation of the temple of Ptah, in the southwestern area and on levels prior to the temple of Tuthmosis III.

Temple of Ptah: sondages and mud brick walls beneath the temple

Among the most important findings from these last seasons, we had first to record many potsherds which were found during sondages made underneath the temple of Ptah, particularly in the courtyard.

Despite their small size, collected ceramics from the levels associated with the mud brick structures which were identified in the excavated area (such as the massive mud brick wall M4 = 740), prior to the temple of Tuthmosis III, seem to be dated from the end of the XVIIth dynasty to the beginning of the XVIIIth dynasty. Most of the main shapes identified, which were manufactured in Nile clay, include flared cups or bowls, beer-jars and bread-moulds characterized by a thick wall; in addition, we must mention a few body-sherds of vessels easily recognizable by their finely incised decoration (specifically wavy-lines). A deep trench also provided archaeological data dating back to the Middle Kingdom (see below).



Middle Kingdom pottery sherds found beneath Tuthmosis III's Ptah Temple © Cnrs-Cfeetk/M. Abd el-Ghasul, P. Calassou.

Southwestern temple area

In autumn 2011 and spring 2012, a study of a vast deposit of pottery found in close proximity to the first gate identified to the south of the temple of Ptah was begun. This analysis is significant because most of the pieces show a *facies* clearly dated to the Late Period, a chronological sequence too long neglected at Karnak, which remains difficult to assess without reliable stratigraphy.

[3] C. Defernez, Cnrs UMR 8167-Univ. Paris IV Sorbonne; S. Boulet, Fnrs/Crea Patrimoine/Univ. Libre de Bruxelles.

One of the main discoveries of the 2012 season was an important homogeneous pottery assemblage consisting of fragmentary vessels. Until now, the limits of this deposit remain undetermined (sector 2, trench 7 – US 247-248, 250, 253).

As demonstrated by the illustrations presented here, the most common shapes attested include a significant amount of open forms, which were made in a fine marl clay (Vienna system Marl A4, variant 2), such as large cups characterized by a thick wall and a rolled rim (with a diameter of more than 30cm) [fig. A-B] and flared cups with a direct or S-profiled rim [fig. C]. The closed forms, which also were manufactured in a Marl clay, mostly consisted of some typical short-necked spherical jars (with S-profile) [fig. D] and a few storage jars with a cylindrical or pear-shaped body; the walls of these pieces almost always show a network of flat grooves [fig. E].

In the class of the pottery made in Nile clay (Vienna system Nile C or Nile B2), the corpus consists of cups or beakers, which are marked by a wide ledged base (commonly used for burning incense) [fig. F]. This repertoire also includes pieces supposedly belonging to the class of the fire-dogs (pot-stands), conical cups or bowls, and small everted-cups with flat bases. Finally, many pieces of jars characterized by convex necks, thick rolled rims and thick white slip (which is applied in form of wide strip) must be noted.

In the tradition of the ceramic industry of the Third Intermediate Period, some pieces however reveal profound technological and typological changes. A major development in the material is obvious. Their dating ranges within the XXVth dynasty. There is no direct evidence to explain this evolution. In any case, it might have been originally associated with a new political framework in the Theban area during this time.

In light of these preliminary results, one point must be made: this closed and homogeneous set has numerous parallels with corpora from the Kushite royal tombs (for example, cemetery of Nuri, Sanam or El-Kurru). It is clear that such important deposits dated to the Late Period are rare, which therefore necessitates a serious, full study. This work will be undertaken by St. Boulet in her PhD, under the direction of Professor L. Bavay (ULB).

After a first examination of the documentation, another fact becomes apparent: the study of the pottery from excavated area of the temple of Ptah must be connected with the material recently found in the occupation levels of the Treasury of Shabaka.

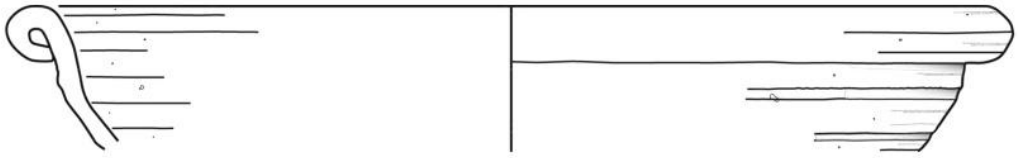


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FIG. A

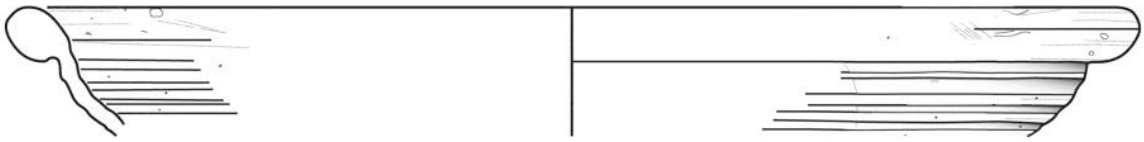

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FIG. B

S2 / 0004 / 247

FIG. C

S2 / 0039 / 248

FIG. D

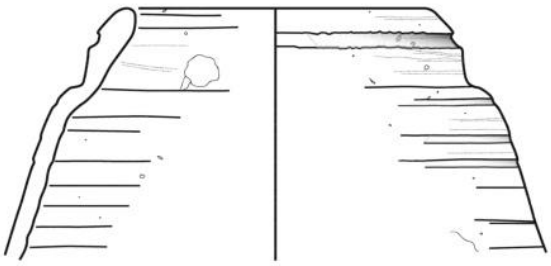

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FIG. E

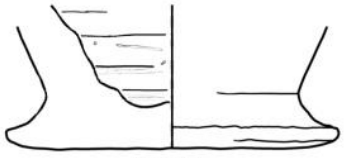

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FIG. F

Pottery from area 2, sounding 7; fig. A-E: Marl clay; fig. F: Nile clay © Cnrs-Cfeetk/B. Böhm, St. Boulet.

The gate of Senakhtenre Ahmose (S. Biston-Moulin)

In February 2012, the team discovered at the southern edge of the temple of Ptah the first elements of an administrative structure (doorjamb and fragmentary limestone lintel) dating from the XVIIth Dynasty (ca. 1634-1543 BC).

Access to these monoliths was very difficult. Only the crane of the Centre allowed the massive doorjamb of the gate (2.03 m high and weighing nearly one ton) to be extracted.

These two elements of a granary door bear the name of king Senakhtenre Ahmose. The inscriptions allow this king of the XVIIth Dynasty, previously only known through his coronation name in later king-lists, to be identified more precisely. They also finally resolve uncertainties about his birth name, Ahmose. Only one king bears the birth name Tao, Seqenenre. That Ahmose is the son of Re name of Senakhtenre leads to the conclusion that this king must be a member of the Ahmoside royal family of the late XVIIth and early XVIIIth dynasties, of which he is to date the oldest known representative.

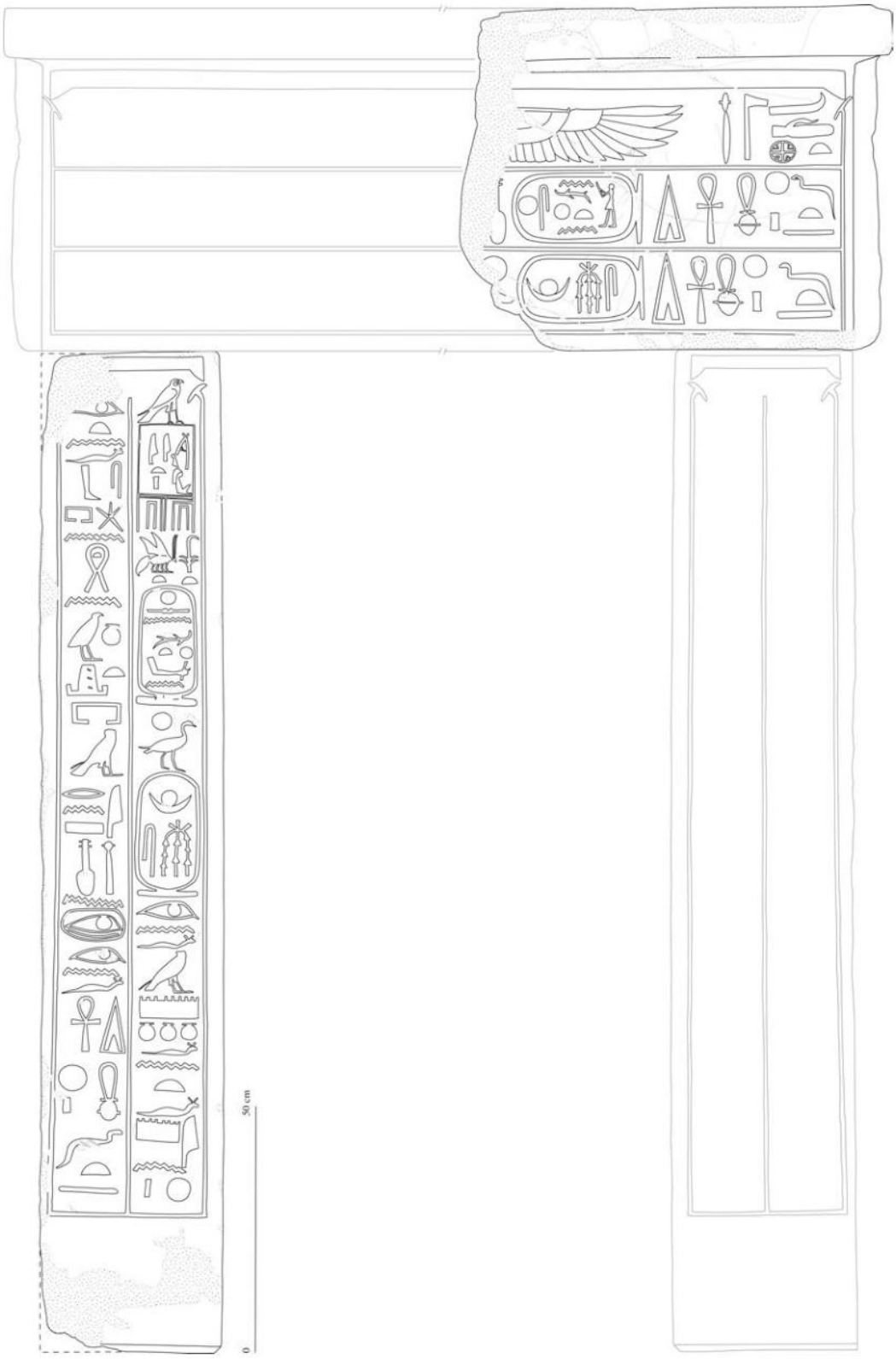
Senakhtenre, about whom we knew nothing until now, was considered by the ancient Egyptians themselves as one of the founding ancestors of the rulers of the New Kingdom. The location of his tomb, which was most likely on the west bank of Thebes, is unknown.

The identification of a Pharaoh through the discovery of his almost complete royal title is extremely rare and the significance of this find must be emphasized.

An article was quickly published in an Egyptological online journal to accurately report this discovery, which had been quoted many times in the media (print and electronic) and in archaeological journals.

- S. Biston-Moulin, « Le roi Sénakht-en-Rê Ahmès de la XVIIe dynastie », *ENiM* 5, 2012, p. 61-71 (http://www.enim-egyptologie.fr/).
- S. Biston-Moulin, Chr. Thiers, P. Zignani, « Erster archäologischer Nachweis für Pharao Senachtenre Ahmose », *Antike Welt* 3/2012, 2012, p. 4.
- Press release on the website of the CNRS: http://www2.cnrs.fr/presse/communique/2511.htm
- *Pharaon Magazine* 9, 2012, p. 16-17.
- *Dossiers d'Archéologie* 352, juillet-août 2012, p. 88.

Parts of the gate of SenakhtenRe Ahmose © Cnrs-Cfeetk/J.-Fr. Gout.



Parts of the gate of SenakhtenRe Ahmes © Cnrs-Cfeetk/Chr. Thiers.

Epigraphic survey (Chr. Thiers)[4]

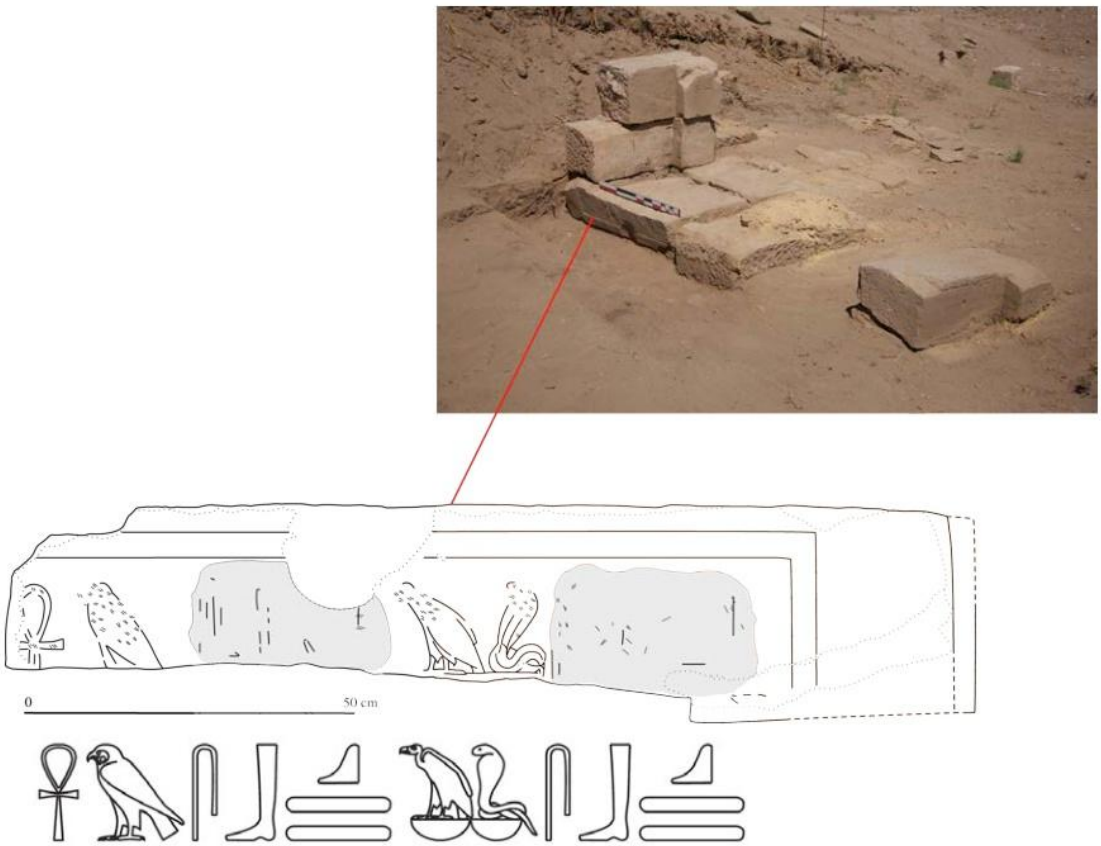
The epigraphic survey was completed in the field, including additional drawings made as the restoration programme undertaken on the gates and chapels revealed parts of walls that had formerly been covered or were not readable due to old restorations. These records have been added to drawings made a few years ago to finalize the work for publication.

All the corrections of the drawings of the chapels' walls are being digitized, this part of the temple is difficult to draw due to the importance of Amarna hand hammering and the stages of carving / plastering that followed.

Location plans of scenes and texts were produced and added to almost all drawings. Hieroglyphic texts were written using JSesh software for publication.

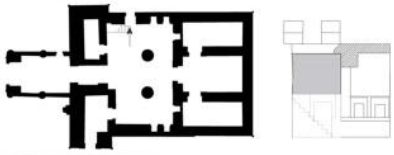
With the last checks completed, the manuscript of the epigraphic survey of the temple of Ptah should be submitted in the course of 2013.

The epigraphic documentation from excavation was also surveyed (Hatshepsut blocks reused in the foundations of the temple of Ptah; the obelisk fragment reused as a threshold for the first Ptolemaic gate; talatat with the name of Nefertiti; the reused lintel of Shabaka; parts of the gate of SenakhtenRe Ahmes; various blocks...).

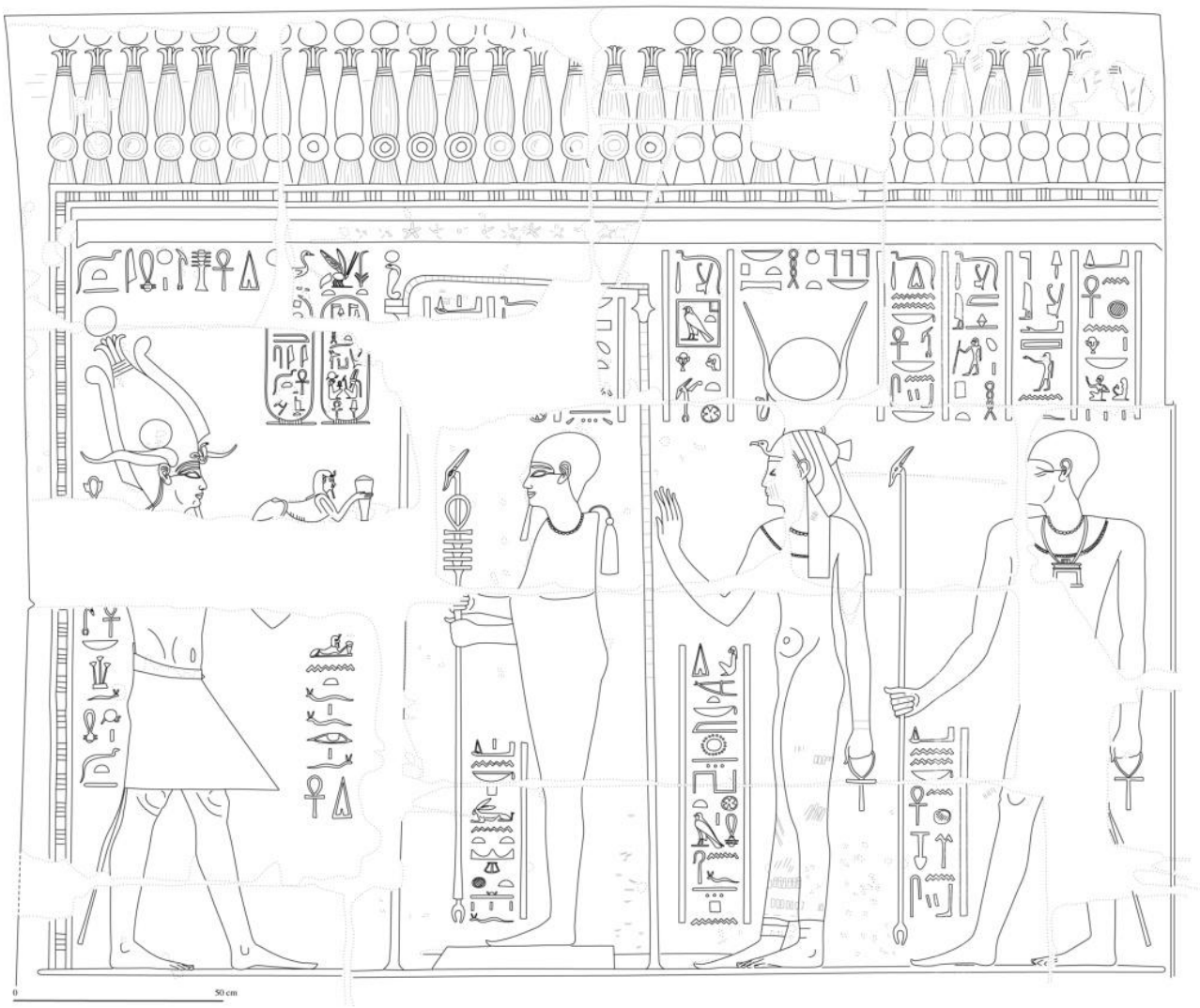


Lintel of Shabaka reused as threshold of a Ptolemaic gate © Cnrs-Cfeetk/Chr. Thiers.

[4] With M. Abd el-Ghassul (Mea-Cfeetk) and S. Biston-Moulin (USR 3172-Cfeetk).



Ptah, n° 125



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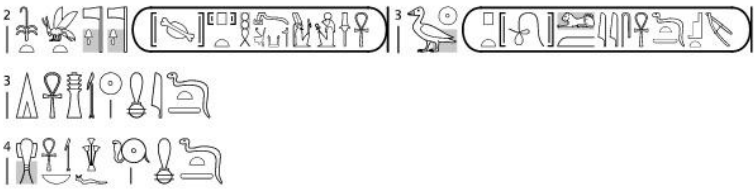
Brugsch, *Thes*., p. 1189
Urk. VIII, nº 231

Title

Ptolemy Philopator



Ptah

Hathor

Imhotep

Together with the previous page, this is an example of the manuscript of the Ptah temple epigraphic survey (facsimile and typographical hieroglyphic texts) © Cnrs-Cfeetk/Chr. Thiers, S. Biston-Moulin.

Hieroglyphic and hieratic graffiti (E. Frood)[5]

Two short seasons were held in 2012: March 17-27 and September 17-30. The September season was conducted together with Kathryn Howley and Julia Troche, doctoral students of Egyptology at Brown University, USA. The March season concentrated on epigraphic recording and analysis of graffiti on the south exterior wall of the temple of Ptah, continuing the work of the April 2011 season. We had two primary aims for the September season: 1) to experiment with a new photographic method that seemed to have potential for enhancing recording practice, especially of the faint and partly legible graffiti on the south wall; 2) to continue epigraphic recording of the graffiti on the west Ptolemaic entrance, the south wall, and the north wall. A systematic recording strategy has been developed, for which the new photographic technique now promises to be an important complement. As ever, the copies, photographs, and analyses produced by Serge Sauneron and Claude Traunecker during their previous work on the graffiti, and now in the Griffith Institute, Oxford, are an invaluable guide to the work.

Epigraphic drawing of the mainly figural graffiti on the north and west sides of the temple is now complete, largely through the work of Julia Troche and Kathryn Howley. The inking of these drawings via Illustrator is underway, as is the inking of some of the drawings of graffiti on the south wall. Work in the March season completed drawings of a number of blocks on the south wall, including the second scene of Thoth and Ptah on block 7 (the scene on block 6 was drawn in 2011), and further drawings were finished in September. Three blocks on the south wall remain to be drawn (including a new block bearing traces discovered in September), as well as figural graffiti on the gates that were not included as part of the main programme of epigraphy in the temple. During the March season, a proportion of time was also spent checking, determining, and securing readings for those blocks that had not then been drawn, especially those which are palimpsest, which bear signs of erasure and/or overlaid plastering, and those in areas where the wall surface has degraded. The library of the CFEETK was an excellent resource for this work, allowing me to regularly and easily pursue potential readings and parallels. This preliminary process of checks assisted the recording of some of these blocks in September, and will be productive for the next season, together with the results of our photographic work.

The photographic method we tested in September has proved very successful. Highlight (or: 'shiny ball') Reflectance Transformation Imaging (RTI) is a photographic method that captures the surface shape and colour of an object or area and allows it to be re-lit from any direction. The technique also permits detailed and various enhancement of surface and colour. The captures are generated from multiple (ca. 50-70) digital photographs taken from a stationary camera position, which produce a series of images with varying highlights and shadows. The open-access software then generates a model of the surface, enabling us to manipulate the lighting of the surface and to examine it in detail.[6]

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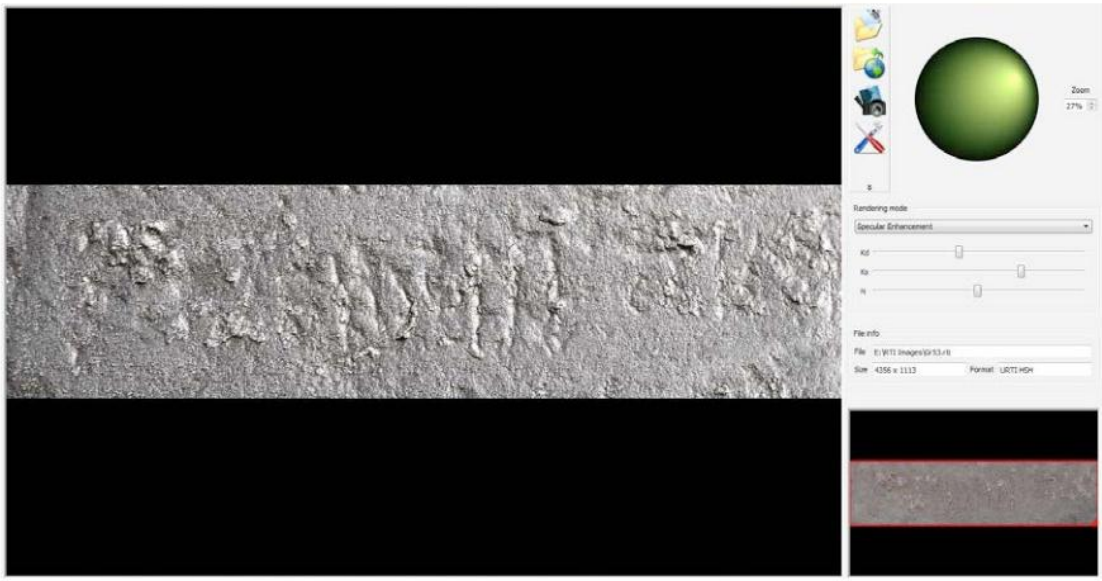
[5] I would like to thank Ibrahim Soliman, Director of the Temples of Karnak, for his generous support of this project. My thanks also to Oussama Mohmed Moustafa, Mohamed Bedaoui, Christophe Thiers, Pierre Zignani, Sébastien Biston-Moulin, Karima Dowi Abd al-Radi, Mohamed Saidi, and Raîs Awad for all their help in facilitating the work.

[6] For details of the method and software (RTI Builder and Viewer), see http://culturalheritageimaging.org/. Kathryn Piquette (Humboldt University, Berlin) has been driving the use of RTI in Egyptology and Ancient Near Eastern Studies, and her blog is an invaluable resource: http://kathrynpiquette.blogspot.com/. A very advanced use of RTI for broadly comparable material is Cornelia Kleinitz's (Humboldt University, Berlin) project to record graffiti at Musawwarat es Sufra in Sudan: http://musawwaratgraffiti.mpiwg-berlin.mpg.de/

Kathryn Howley, an experienced photographer, led this aspect of the work. We took 25 successful RTI captures, ranging from whole blocks to individual graffiti. This gave us a good sense of both the potential and limits of the method. We also experimented with different set-ups, including using tables and scaffolding, all through the kind assistance of Raîs Awad. The results just from this first set of experimental captures were very promising. Although the post-processing work on the images has yet to begin in earnest, and will be undertaken in Oxford, we were able to secure readings for previously illegible graffiti, discover traces of new graffiti, and examine in more detail the relative chronology of the 'graffiti events' on the wall.



A screenshot from the RTI Viewer of the graffito of 'scribe Amenemhab', a previously illegible name from the palimpsest and degraded Block 12. The green globe shows the light position selected for this shot. Traces of plaster are also visible in the inscription, indicating that the graffito had been whitewashed.

The RTI images will also allow us to more closely examine the earlier and partly erased inscriptions beneath the two scenes on the south wall, as well as the process of re-carving of the scene of Thoth before Ptah and Hathor on block 6; an example which points to this potential is given in below.

A detail from the RTI capture of the scene on Block 6, showing the palimpsest inscriptions beneath the scene and details of the re-carving of the legs of Thoth and Ptah.

The RTI images will allow us to check and secure readings and interventions across the wall surface. We are hoping to produce more RTI captures in an Autumn season in 2013. These images will not only support the epigraphic work, they will be a primary resource in their own right via online publication.

Preliminary results of the RTI work were presented as part of the Thebes in the First Millennium BC conference at the Mummification Museum, Luxor (October 1-4, 2012), organised by the South Asasif Conservation Project. Discussion of some of the graffiti in Ptah has also been included in C. Ragazzoli, E. Frood, "Writing on the wall: two graffiti projects in Luxor", *Egyptian Archaeology* 42, 2013, pp. 30-33, and in E. Frood, in press (2013), "Egyptian temple graffiti and the gods: appropriation and ritualization in Karnak and Luxor", in D. Ragavan (ed.), *Heaven on earth: temples, ritual and cosmic symbolism in the ancient world*, Oriental Institute Seminars, Chicago.

Conservation-restoration programme (L. Pieri)[7]

Restoration work continued in 2011-2012 in the temple of Ptah, north of the precinct of Karnak, with priority given to restoration treatments of the chapel walls in order to complete the photographic survey, and conservation treatment of the first pylon, which was in an alarming state (imminent risks of loss, extreme sanding).

The first gate

The work on the first gate (Ptolemy VI), much restored by G. Legrain and H. Chevrier at the beginning of 20th century, has formed most of the work this season.

Former treatments: study and removal

The old restorations, based on black cement mortar and cement grouts, prevented the gate from collapsing at the time, but they now aggravate the deterioration of sandstone and threaten the conservation of the building. The cement is significantly more resistant than the stone and impermeable. Thus it blocks moisture exchange: soluble salts crystallize inside the stone, causing significant disintegration of the sandstone.

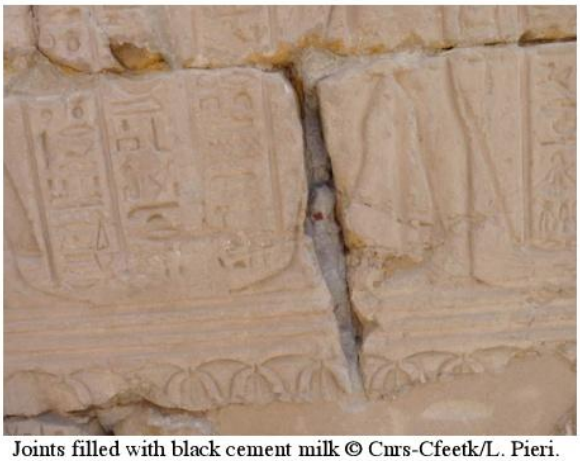
The removal of surface mortars allowed us to observe the old restoration treatments:

- Red brick and black cement mortar filler
- Joint filled with black cement grouts
- Metal plates inserted into joints and under the southern pillar.
- 5 to 8cm black cement slab under the southern pillar.

These elements match the major operation carried out by H. Chevrier in 1933-1934.

[7] With Abdu Mahmud Quoraiem, Mohammed Zaki Masud, Adel Mohamad Radwan, Ghaad Nubi Hussein, Ahmed Hassan Fuli, Waffaa Abo El Hamed, Nagwa Abd El-Ghafour, Yasser Farraj, Abdelnasser Mahmoud, Mahmoud Said Ahmed (MSA-Cfeetk), Agnès Asperti, Anne-Claire Hauduroy (Cnrs-Cfeetk), Lucie Pieri (VI MAEE), Marlène Roca (Cnrs trainee).

Red brick and black cement mortar filler © Cnrs-Cfeetk/L. Pieri.



Joints filled with black cement milk © Cnrs-Cfeetk/L. Pieri.

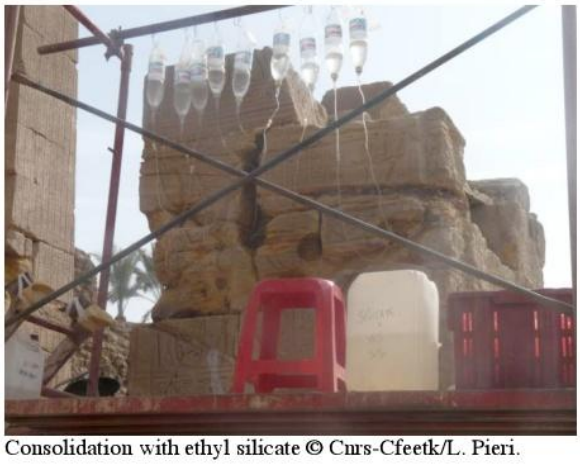
Removal of the greater part of the cement was conducted: plasters, joints and brickwork were mechanically removed with a chisel and hammer, and occasionally with a drill for deep joints. Parts of the brickwork were however left in place on the lower part of northern door jamb and inside southern door jamb due to their structural role. After the removal of plasters, the dramatic damages suffered by the underlying stone appeared.

After removal of brick and cement filler: badly damaged stone (powdering/sanding) © Cnrs-Cfeetk/L. Pieri.

Filler has been left in place inside southern door jamb; however 10cm were removed to correct the depth of the central recess © Cnrs-Cfeetk/L. Pieri.

Consolidation

Depending on the state of deterioration, consolidation with ethyl silicate, occasionally supplemented with acrylic resin, was planned. The non-sculpted parts that were too damaged to be consolidated were purged. 50% Ethyl silicate in White-Spirit was applied drip by drip into 15-20cm holes, and sprayed wet on wet in order to reach the healthy stone and avoid the formation of a consolidated crust. The consolidated part was then sheltered from sun and evaporation over 3 weeks.



Consolidation with ethyl silicate © Cnrs-Cfeetk/L. Pieri.

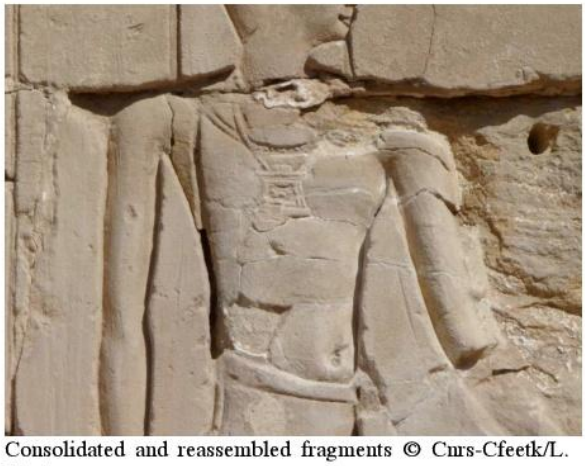
Staining due to silicate disappears after a few months © Cnrs-Cfeetk/L. Pieri.

Some areas were very disintegrated but inaccessible to purging and replacing with healthy mortar (mainly deep inside the joints and at the heart of some blocks). These were treated with silicate supplemented with acrylic resin (5% Paraloid B44) in a common solvent, toluene.

A final area was consolidated only with acrylic resin, as climatic conditions no longer permitted the use of silicate. Paraloid B44 - 5% in ethanol / diacetone alcohol 1: 1, in order to foster a low evaporation and deep penetration - was sprayed in several passages wet on wet.

Loose or shifted fragments were removed and, if necessary, consolidated by an ethyl silicate bath. Contact surfaces were consolidated with acrylic resin (5% Paraloid B44); the fragments were then glued with pasty epoxy resin (Araldite 2015), if necessary reinforced with stainless steel bars. The joints were finally infiltrated with liquid epoxy resin (Araldite AY 103 + hardener HY 956) by syringe after superficial filling with hydraulic mortar (PLM-M).

Stainless steel goujon reinforced assemblage © Cnrs-Cfeetk/L. Pieri.



Consolidated and reassembled fragments © Cnrs-Cfeetk/L. Pieri.

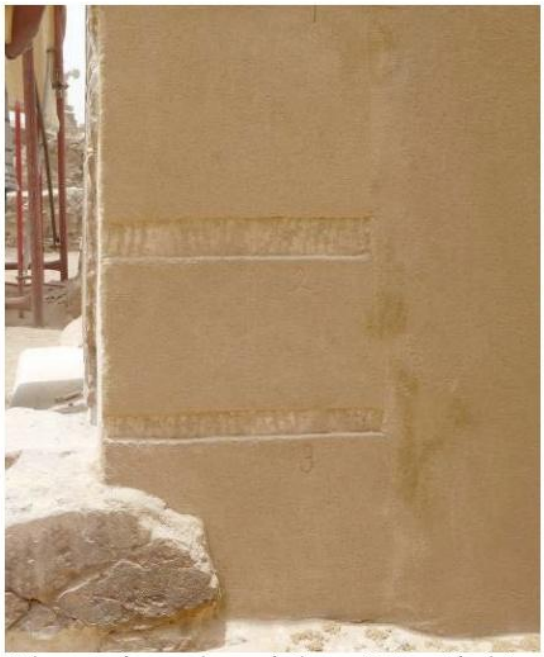
Fillings and plasters

Treatment done at the beginning of the century with a black cement mortar had disastrous consequences, so it was essential to use compatible mortars in direct contact with the still fragile stone. Hydraulic lime mortar provides sufficient strength, is faster setting than slaked lime, remains flexible and porous in order to allow tiny movements and moisture permeability. Filling was done with masonry of small sandstone blocks with 1.5 parts sand to 1 part lime mortar. Under-layer and

colored top-layer plasters were then prepared with 2 and 3 parts sand to one part lime respectively. The amount of binder gets lower from the inside to the outside, which reduces the resistance in order to avoid tensions and increases the porosity to allow the movement of moisture soluble salts. Finally, deep joints were filled with milky lime using funnels.

Filling masonry: sandstone blocks with hydraulic lime mortar © Cnrs-Cfeetk/L. Pieri.

Underlayer of plaster © Cnrs-Cfeetk/L. Pieri.



Color tests for uperlayer of plaster © Cnrs-Cfeetk/L. Pieri.

Uperlayer of plaster © Cnrs-Cfeetk/L. Pieri.

The first gate, during treatment (removal of plaster and bricks and cement filler) and after the complete work © Cnrs-Cfeetk/L. Pieri, Chr. Thiers.

Third gate

This gate was treated last season, but a last, heavily damaged block remained to be consolidated. It was crossed by several cracks and had disintegrated to the heart.

Before treatment © Cnrs-Cfeetk/L. Pieri.

After treatment © Cnrs-Cfeetk/L. Pieri.

After shoring, black cement mortars were removed, revealing lots of sand from the disintegration of stone. The block was then consolidated: the disaggregated and inaccessible heart with acrylic resin (Paraloid B44 5% acetone / ethanol), the rest with ethyl silicate, following the same protocol as above. Furthermore 5 stainless steel bars fastened with liquid epoxy resin (Araldite AY 103/HY 956, 5: 1) secured the fragments and the block to the rest of the pillar.

Chapels

Former treatments: study and removal

The old cement plasters were removed with chisel and hammer. It was then possible to observe the restorations done by Georges Legrain's team in 1900-1901: in the south chapel, the upper part of the walls had been rebuilt using reused sandstone blocks jointed with a pink "*homra*" (brick powder) and cement mortar. This mortar was left in place where it was in good condition, and only partly removed in the joints to allow a better grip for the plaster.

Some reused blocks with hammered remnants of epigraphy were removed wherever possible without destabilizing the construction. In addition, this work lead to an interesting discovery: a vault base carved into the sandstone blocks in the north wall of the south chapel, filled and plastered by Legrain's team. Level with the top of the south wall before Legrain's reconstruction, it was probably created during a late occupation to install a vault in the room. The value of this element for understanding the various phases of occupation justified the removal of the filling.

South chapel: reused sandstone blocks with pink « homra » and cement mortar © Cnrs-Cfeetk/L. Pieri.

South chapel, north wall: the previously filled vault opening © Cnrs-Cfeetk/L. Pieri.

Consolidation and securing

Loose or shifted fragments were removed, contact surfaces were consolidated with acrylic resin (Paraloid B44 5% in acetone / ethanol) before gluing with pasty epoxy resin (Araldite 2015), and injection of liquid epoxy resin (Araldite AY 103 + HY 956).

Epigraphic study allowed the location of two fragments reused in Legrain's masonry to be identified. They were glued with pasty epoxy resin (Araldite 2015), reinforced with two stainless steel studs secured with liquid epoxy resin (Araldite AY103/HY956, 5: 1). After propping the lintel and removing the masonry, the block could be reinserted into its location at the top right of the door pillar and precisely adjusted, thanks to the presence of an inscription line and mirror image on the left side of the door.

Fragments after gluing and plastering © Cnrs-Cfeetk/L. Pieri.

Two reused fragments replaced thanks to epigraphic study © Cnrs-Cfeetk/L. Pieri.

The pillars of south chapel door presented open cracks due to pressure of the lintel. They were secured with 3 Ø6mm carbon fiber bars glued with liquid epoxy resin (Araldite AY 103/HY 956, 5: 1).

Several areas presented structural weaknesses: a network of cracks and detachments were identified visually and by sound. Disintegrated parts were first consolidated by injection of acrylic resin (Paraloid B44 5% in acetone: ethanol 1: 1). Cracks were superficially filled and then grouted

with hydraulic mortar (PLM-M) and locally points of liquid epoxy resin (Araldite AY103/HY956, 5: 1) in order to create bridges.

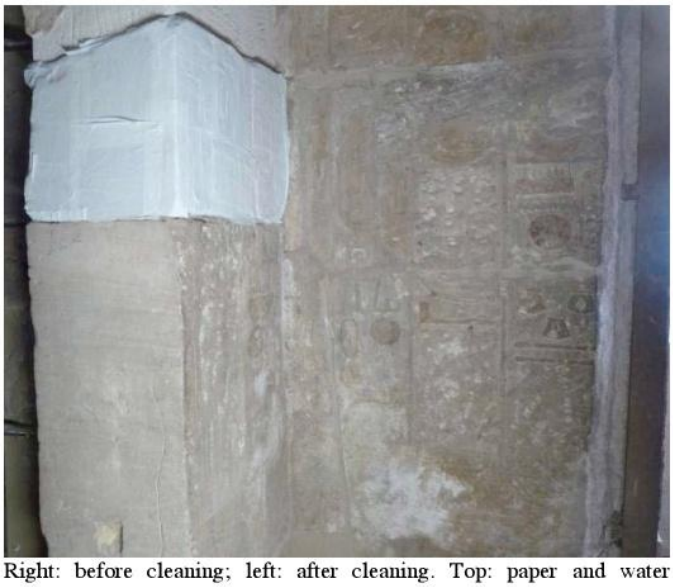
Plasters

Joints and masonry areas were then plastered again with half slaked lime, half white cement mortar (3 parts sand to 1 part binder), using same formulation for the under layer and the colored upper layer. The use of cement was acceptable in this case since we were dealing with reused blocks and cement mortar masonry, and it being an upper section of wall, where soluble salts cannot reach. The plasters are applied 1cm down the stone level, to ensure that the reconstructed areas are visually distinct for the public.

Cleaning

Most of the cleaning was done mechanically, with brush and scalpel for removal of cement projections. Some blocks were soiled with black fatty spots (especially the corners and door jambs, due to repeated rubbing of hands). These areas required the use of 5% ammonium bicarbonate-based compress (in a paste made of cellulose and CMC). The surface was then carefully rinsed with water. Finally, residues embedded in porosity were absorbed with paper compresses soaked with water.

Applying ammonium bicarbonate pulp and plastic coating © Cnrs-Cfeetk/L. Pieri.



Right: before cleaning; left: after cleaning. Top: paper and water compress to absorb residues © Cnrs-Cfeetk/L. Pieri.

East wall of the central chapel, before and after cleaning and restoration © Cnrs-Cfeetk/J.-Fr. Gout, L. Moulié.

Excavation materials

Temple of Ptah: courtyard

Excavation conducted in the temple courtyard in autumn 2011 lead to the discovery of a block belonging to the courtyard's east wall in Legrain's filling. Due to its long burial it presented the beginning of sanding disagregation, which was treated with ethyl silicate as discussed above.

Discovery of the block in the sand filling © Cnrs-Cfeetk/L. Pieri.

Block before treatment © Cnrs-Cfeetk/L. Pieri.

Gate of SenakhtenRe

Extraction of the doorjamb with the crane under the direction of Antoine Garric. © Cnrs-Cfeetk/L. Moulié.

Two monolithic limestone blocks were discovered during excavations conducted south of Temple of Ptah under the direction of Christophe Thiers and Lucie Amami in December 2011: a fragment of a lintel surmounted by a cornice and a door jamb. They certainly belong to the same doorway, leaning against a brick structure identified as a granary by the epigraphy. The presence of cartouches bearing for the first time the full titulary of king Senakhtenre Ahmose is exceptional.

The aim was to ensure the consolidation of the structure (cracks and loose fragments) to allow subsequent handling and ensure readability for the purposes of scientific analysis and publication. Uncertainty about the future of the block and the high probability that it may remain outside and subjected to heavy handling meant that it required significant consolidation.

The small and accessible fragment of lintel could be extracted using a hoist and a goat. The door jamb, however, was located partly underground and its weight was estimated to a ton, requiring the use of the crane. Before these operations, temporary consolidations were performed on the cracked

parts with gauze and cyclododecane, some loose fragments were deposed, and the blocks were belted by straps to maintain the fractured parts.

The two blocks are carved in fine grained white limestone, with some inclusions of flint and metal nodules that certainly indicate a local source, in contradiction to the inscription on the door jamb: "a granary door in beautiful white stone from Ân"[8] suggesting limestone from northern Egypt, which was inaccessible at the time.

The gangue of earth was largely removed still wet using spatulas and small tools. However, the still moist limestone was extremely soft and friable (it could be scratched with a fingernail), making any treatment risky. After two months of slow drying under a cloth in the shade, its strength had improved considerably and conservation interventions could be carried out.

The rare traces of colored layers were reattached using acrylic resin (2.5% Paraloid B72 in acetone). Cleaning was carried out using latex's milk peeling film, which successfully removed much of the residue embedded in the pores. The thin residual layer of soil was then cleaned using cotton swabs moistened with water.

Latex's milk peeling film to clean the surface © Cnrs-Cfeetk/L. Pieri.

Before

After

[8] S. Biston-Moulin, "Le roi Sénakht-en-Rê Ahmès de la XVIIe dynastie", *ENiM 5*, 2012, p. 61-71 (www.enim-egyptologie.fr/).

Small fragments were glued back with 50% acrylic resin emulsion (Acril 33). The bigger fragments were cleaned, contact surfaces were consolidated with acrylic resin (Paraloid B44 ® 5% in acetone-ethanol, 1: 1), then glued with dots of pasty epoxy resin (Araldite 2015), locally reinforced with stainless steel or fiberglass studs. Six fragments belonging to the cornice of the lintel were found in the survey and could be reassembled.

Two stainless steel studs (Ø8mm, 50cm) were set up in the lintel fragment to maintain the central crack. The overhanging fragments of the cornice were also armed with small fiberglass studs (Ø4 and 6mm 8cm). For the doorjamb, the large fragment from the back corner was armed at its heart with a stainless steel stud (Ø8mm, 20cm).

To ensure resistance of collages in case of heavy handling and intensive exposure to heat, cracks were furthermore injected with liquid epoxy resin (Araldite AY103/HY956, 5: 1 and Kemapox RL214/RM 022, 10: 1); this was performed after filling all joints with hydraulic mortar (PLM-M). The powdery parts (lower part of the doorjamb and left fragmentary part of lintel) were consolidated with 5% Paraloid B72 in acetone.

Finally, cracks, gaps and the contours of the fragments were filled with a hydraulic lime-based mortar, both in order to protect the edges and improve its aspect. The filling recreates the general volumes of little gaps and fragmentary parts but remains clearly discernible since it is below the original level, and has a different texture and color.

1

2

3

4

Fragment of lintel
1. Removal of fragments, cleaning
2. Joining fragments, consolidation
3. 4. Filling

1.8. Site management

As in previous seasons, the loose blocks after restoration were stored on a bench in order to preserve them for the future. Site project management of the temple included the presentation of most of these blocks close to their place of origin, if anastylosis was not possible. In the same manner, it is planned to use the thickness of the enclosure walls (now destroyed) to store the blocks belonging to the first two monumental gates: these fragments will not be visible from outside.

At the end of the excavation of the temple courtyard, a new pavement was laid to protect the original limestone slabs and to prepare for the opening of the temple to visitors. In the main chapel, a wooden floor was added upon the old limestone slabs to protect them.

New flooring for visitors in the courtyard © Cnrs-Cfetk/Chr. Thiers.

Totally destroyed stone from column base replaced by a new stone by A. Garric © Cnrs-Cfeetk/Chr. Thiers, A. Garric.

1.2.2. The Treasury of Shabaka (N. Licitra)[9]

The eighth excavation campaign of the Treasury of Shabaka was carried out from March 26th until May 30th. The fieldwork was directed by Nadia Licitra, PhD student of the Paris IV-Sorbonne University (UMR 8167), under the supervision of D. Valbelle and C. Bonnet. About ten workmen joined in the excavation. Hassan Mohammed (conservator, Ifao) was responsible for the consolidation and the removal of about ten plastered and painted fragments of the wooden ceiling of the porch of the Treasury (see *infra*).

In 2006 a geophysical survey carried out by Th. Herbich for the CFEETK confirmed the presence, a few meters south of the Treasury, of a wall oriented from east to west that has been identified with the northern section of the enclosure wall of the precinct of Amun.

In order to verify the relationship between the Treasury and the enclosure wall of the temple, the southern excavation area has been extended for about 10 metres.

The wall, about 5 m wide, appeared immediately under the thin surface layer that covered it. It was possible to observe, therefore, that the eastern wall of the Treasury (north-south) continued up to the enclosure wall, which leans against it and forms a right angle with it. This confirms that the Treasury was situated outside the precinct of Amun and that it used the enclosure wall of the temple as its own enclosure wall.

Treasury of Shabaka. View of the southern excavation area and of the courtyard lying between the room of the benches and the enclosure wall of the temple of Amun © Cnrs-Cfeetk/L. Moulié.

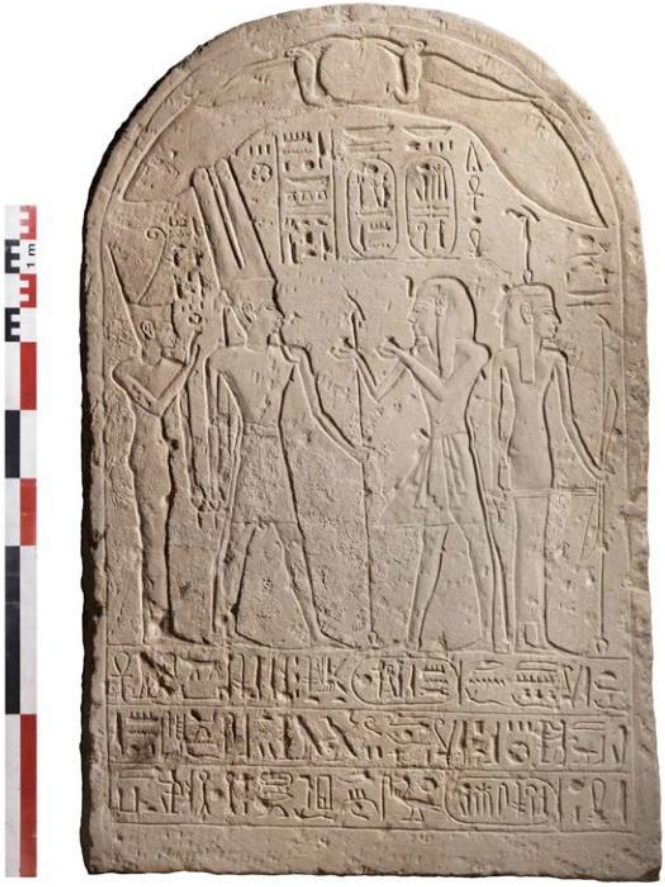
A wider part of the peripheral courtyard situated between the room of the benches and the enclosure wall has been brought to light. On the courtyard floor, between the massive structure of the stairway and the enclosure wall, a pottery assemblage was discovered, sealed by the destruction of the

[9] I would like to thank Mr. Mansour Boraik, Director of Upper Egypt, Mr. Ibrahim Soliman, Director of the temples of Karnak, M. Christophe Thiers, Director of CFEETK and Mr. Amin Ammar, Chief Inspector, who facilited my work.

Treasury. This assemblage is made up of Egyptian and Levantine jars, some *sigas* and some fragments of Greek archaic amphorae.

The study of this assemblage will be carried out during the autumn 2012: the presence in this assemblage of many fragments of imported Greek and Levantine pottery is of great interest and will be crucial for fixing the date of the abandonment of the building.

In the south-western edge of the excavation area, the courtyard floor had been cut by a large Ptolemaic pit. This pit, going down deeply in the stratigraphy, seems having reached the New Kingdom levels. In the filling of this pit, an intact stele of Ramesses III was discovered. This stele, originally set up against the exterior face of the near enclosure wall, commemorates the reconstruction of the enclosure wall during the reign of this king.



Treasury of Shabaka: stele of Ramesses III discovered on the site during the eighth campaign © Cnrs-Cfeetk/L. Moulié.

During the campaign, Hassan Mohammed (conservator, Ifao) removed the fragments of the wooden ceiling of the porch (northern excavation area) discovered during autumn 2011. Among these fragments, it was possible to observe a motif with red squares and two parts of an inscription line with the blue and red painted titulary of the king.

Treasury of Shabaka: fragments of the porch ceiling after their removal © N. Licitra.

Treasury of Shabaka: fragments of the porch ceiling after their removal © N. Licitra.

The archaeological research carried out until now on the site gave precious information concerning the function of the excavated rooms and the general plan of the building. For this reason, a study season will take place during autumn 2012: firstly, the assemblage discovered in the southern peripheral courtyard (see above) will be studied in order to determine the date of the abandonment of the Treasury. The wooden ceiling fragments removed during the spring will be studied also, in order to understand the technique of construction and the kind of decoration chosen. These studies will supplement the data given by the excavation and will allow to acquire a better knowledge of the elevation of the building and of its abandonment.

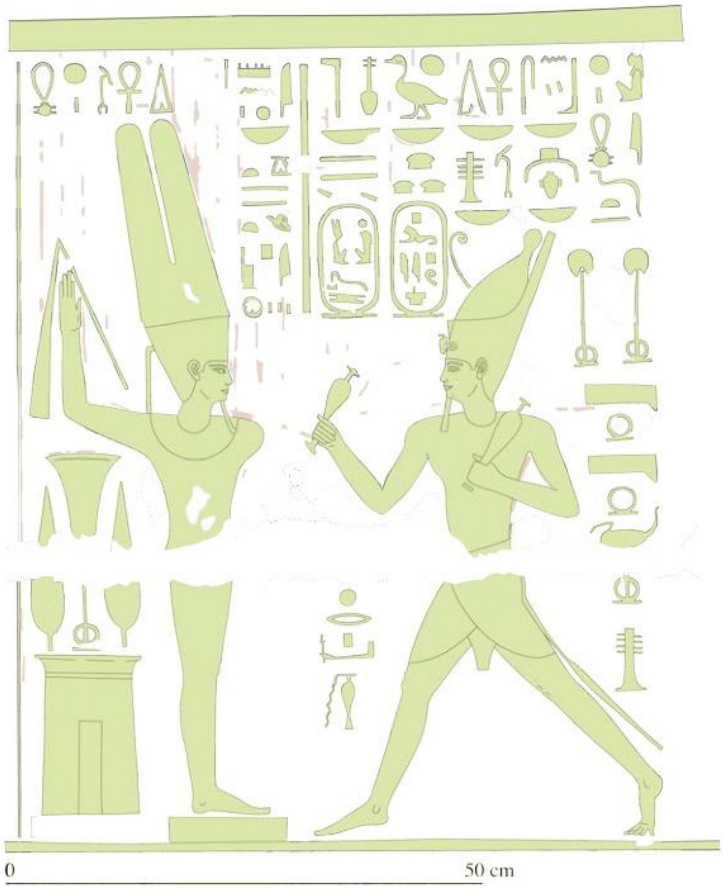
1.3. Ptolemaic studies

1.3.1. Epigraphic survey of Philip Arrhidaeus bark-shrine (Chr. Thiers)[10]

Initiated in the fall of 2010, the epigraphic survey of the chapel of Philip Arrhidaeus located in the center of the temple of Amun-Re, has increased significantly during the 2012 season and will be completed in 2013.

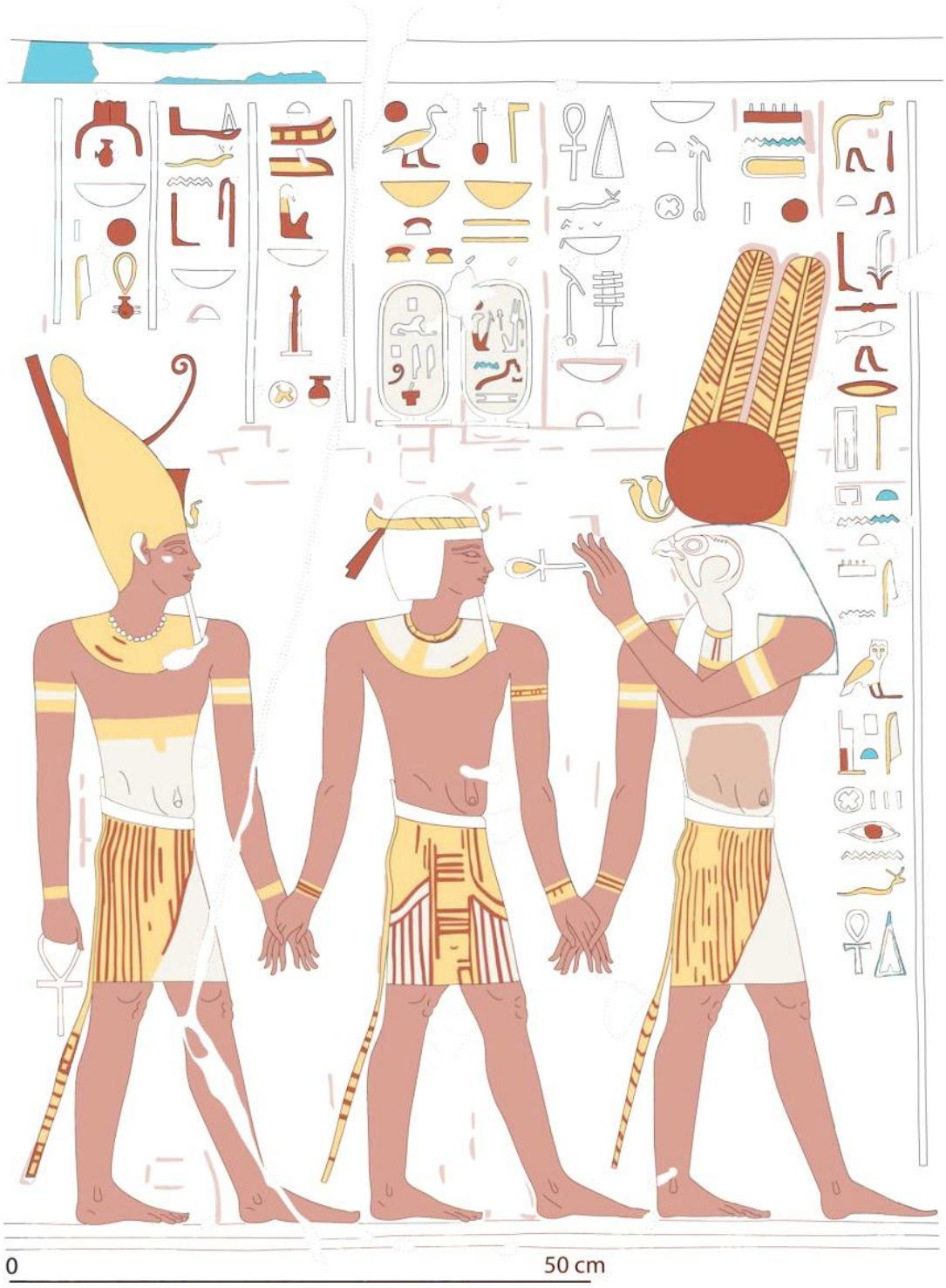
The entire epigraphic survey of the inner and outer walls of the building is now completed. Only a few scenes in the chapel of Min-Kamutef should be treated. Digitalization of scenes was performed, noting the traces of color, which is extremely well preserved and provides significant information, whether for clothes and headdresses or paleographic details of hieroglyphic signs. One can note that the inner walls of the first room are decorated with scenes exclusively painted in green. The bark shrine and the outer walls show various colors. These important traces of polychromy require long and necessary checkings.

The photographic survey begun in 2011 continued and is largely completed; some photographs of details are still needed to complete this programme.



Drawing of a monochrome scene from the southern inner wall of the first room © Cnrs-Cfeetk/P. Calassou.

[10] M. Abdel Ghassul (Msa-Cfeetk), P. Calassou (Cnrs-Cfeetk), St. Facon, R. Pietri (Cnrs trainees).



Drawing of a polychrome scene from southern outer wall Cnrs-Cfeetk/P. Calassou.

1.3.2. The Ptolemaic gate of the 2nd pylon (M. Broze, R. Preys)[11]

This project of the CFEETK, in collaboration with the *Belgian Fund of Scientific Research* (FRS/FNRS) and the Centre Interdisciplinaire d'Etudes des Religions of the University of Brussels, is assisted by the Belgian *Fund of Scientific Research* (FRS/FNRS and FWO), by the University of Brussels and the University of Namur.

During this campaign (February 2nd 2012 to February 29th), we studied the Ptolemaic parts of northern and southern passages from the doorway to the hypostyle hall engraved in the time of Ptolemy VI.

The figures

As in other years, we achieved a first set of drawings of the figures of the registers in Brussels thanks to the photographs provided by the CFEETK.

These drawings were made by Stéphane Fetler with the use of a graphic table and the computer programme Illustrator. All the drawings were checked in the field by three different teams, and the corrections were integrated in the computer drawings. Details of the figures were also photographed in order to incorporate them in the drawings. We observed very fine details, carved and painted, on the crowns and the dresses of the gods and the king, as we had for the southern and northern jambs of the doorway. We will certainly highlight the quality of the art during the Ptolemaic Period, which unfortunately often remains underestimated.

Special attention was given to the colours preserved on the figures. As for the southern jamb, the colours are best preserved in the upper registers, but we have observed some traces of colours, sometimes very tiny bits, in the other registers too. So we can say, for example, that the crown of the god Amun was dark blue. We documented them in photographs as well as on the drawings. This aspect will be integrated in the publication in separate drawings.

Finally, we took measures and detailed photographs of the *martelages* on the face and limbs of the king and the gods, in order to study and document them in the publication.

The inscriptions

We made a first copy of the inscriptions of the eight registers on the photographs, and verified them three times. All the corrections were noted on the drawings and incorporated in computer drawings after discussion between the members of the team.

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[11] Pr. Dr. Michèle Broze: Belgian Fund of Scientific Research (FRS/FNRS) - University of Brussels, Pr. Dr. René Preys: University of Namur/University of Leuven, Audrey Dégremont: Belgian Fund of Scientific Research (FRS/FNRS) University of Brussels, Arnaud Delhove: University of Brussels, Yoneko Nurtantio: University of Brussels, Stéphane Fetler: University of Brussels, Amandine Godefroid: University of Brussels, Architects: Pierre Zignani and Matthieu Van Peene (Cnrs-Cfeetk), Topographist: Vincent Tournadre (MAEE-Cfeetk).

We first want to thank M. Ibrahim Suleiman, who has welcomed us for the third time, gave us all the facilities to work on the second pylon, helped us with his advice, and gave us a team of experienced workers on the scaffolding. We are also grateful to M. Mansour Boraik, Head of the Antiquities of Luxor and Director of the Centre Franco-Egyptien d'Études des Temples de Karnak. We want also to thank our inspector, Shimaa Montaser, who was always helpful and very concerned about the safety of our scaffolding, and interested in our work on the monument. Her advice in the daily management was very precious, and she did all she could to make our work easy. Once again, the raïs, Mahmoud Farouk and his workmen provided us with their expertise on the building of the scaffolding. Their efficiency at moving the scaffolding (indeed, the big difficulty of this campaign was to move the scaffolding from the northern side of the passage to the southern side) was without doubt an important help for us to achieve our mission. We do thank our workmen for their constant care for our safety while working on the second pylon, this year as the other years. Our thanks also go to Christophe Thiers and Jean-François Gout for letting us use the infrastructure of the CFEETK.

As for the figures, we checked and documented the colours and the *martelages* present in the hieroglyphs. So can we observe that the birds and some mammals, like lions, cows and rams, were systematically destroyed, while the snakes were left untouched. As for the *martelages* of the figures, this seems to be the result of a programme of destruction.

Each hieroglyph was photographed separately with a macro-lense. This has facilitated the paleographic study of the monument. Macro-photographs were taken for all the registers of the pylon. Thanks to that, we were able to realize a paleographical database listing all the signs included in the texts. This database is currently almost complete. This will not only demonstrate the difference between the registers dating to Ptolemy VI and the texts on the base dating to the reign of Ptolemy VIII, but it will also enable comparison with other monuments of these two kings who were particularly active in the Theban area, for example the Opet temple in Karnak and a shrine recently discovered in the Mut temple. We thank Ibrahim Suleiman for giving us the permission to visit for the first time the temple of Opet in 2010. This temple contains well preserved representations of divinities whose clothes are similar to those of the Second Pylon, and the colours preserved on the hieroglyphs could be compared to the less well preserved signs of the second pylon. This comparison will enable us to propose a reconstruction of the pattern of colours in the second pylon. We have prepared an Excell file which contains all our observations.

In order to complete our databases, we hope we will get the opportunity to study some monuments of Ptolemy VI and VIII in the Theban area.

The graffiti

In 2009, we found two graffiti, one from Olivier (1843) and one in Arabic (no date). We can add to them two new ones: one of E. Wautet (?) from 1867, and a greek graffito of a Sarapiôn.

We also documented a Christian symbol (the Cross) on the southern jamb of the doorway.

Architectural structure

A first architectural drawing of the gate was realised by P. Zignani and M. van Peene, with the help of the topographist V. Tournadre. Their work will be a part of the publication and will help us to understand the planification of this huge construction.

Restoration of "emergency situations"

On the northern side, we detected some places which seemed to require urgent restoration. We asked the team of CFEETK conservators to have a look and they fixed some parts of the wall. In the southern part, the scaffolding was used to make an intervention, mostly in the upper part where we found some problems. The photograph of this intervention on the northern part figures on the CD.

Collaboration with a teacher of drawing

We were happy to explain to the students of Moamen Saad Mohamed the methods we use for the copying and editing of the gate: our drawings are based on photographs, verified in the field and then discussed before entering corrections in the computer drawings. And this year, for the texts engraved on the bases, we used plastics to ensure the relative position of the signs on the wall.

The theology

As we have now studied the two jambs of the door and the passage, we have observed many links between them, for example in the writings of the name of Amun, which are very interesting and not at all usual. Moreover, we observed links between the texts of the bases and the texts of the scenes, This could prove that the theologians had a global conception of the door, even if the texts of the bases are dated to Ptolemy the Eighth, and the scenes to Ptolemy the Sixth. In the passage, we find scenes figuring the cult of the royal ancestors and the Osirian cult and myth, linking the gate with the Opet temple, place of the birth of the god in the Theban area.

1.4. Osirian sanctuaries (L. Coulon)

Since 2012, the « Osiris Sanctuaries » programme has grouped together the excavation and epigraphic survey of the northern Osiris chapels at Karnak and the systematic documentation of Osiris buildings at Karnak, with the support of the IFAO, the Cfeetk, the University of Lyon (UMR 5189 - HiSoMA) and the University of Paris-IV (UMR 8167 - Orient et Méditerranée).

The Chapel of Osiris Wennefer Neb-djefau and the neighbouring chapels

The eleventh campaign of excavation and restoration of the chapels of Osiris to the north of the Great Hypostyle Hall was undertaken between the 4th of February and the 3rd of March 2012.[13]

General view of the chapel of Osiris Wennefer Neb Djefau after restoration of the naos and the south mudbrick walls © C. Giorgi.

[13] The members of the team were Laurent Coulon (egyptologist, University of Lyon 2-CNRS), Catherine Defernez (archaeologist-ceramologist, UMR 8167-Cnrs/Univ. Paris 4) assisted by Stéphanie Boulet (ceramologist, ULB Brussels), Hassan el-Amir (conservator, IFAO), Thomas Faucher (IFAO), Cyril Giorgi (archaeologist, INRAP), Anna Guillou (archaeologist and artist, Amiens), Frédéric Payraudeau (egyptologist, University of Paris IV), Alexandre Rabot (archaeologist, University of Lyon), Laurent Vallières (topograph, INRAP), Khaled Zaza (artist, IFAO). Mr. Wahid Youssef was representing the Supreme Council of Antiquities under the direction of Mr. Ibrahim Soliman

Excavations

The operations led in 2009 and 2010 at the entrance of the hypostyle hall had allowed us to have a first idea of the mode of foundation of a part of the chapel. In 2012, two additional soundings confirmed the presence of mudbrick foundation platforms in support of the columns of the hypostyle hall. The first sounding, located in the western part of the hypostyle hall, was started as a stratigraphic sondage, and then enlarged in the form of a trench, directly below the second gate. Two mudbrick walls facing each other were found, on which the columns were built. The brick facings observed during this sounding directly below the bases of columns follow the same orientation as those observed during the previous sounding and are doubtless part of the same structures. Another sounding undertaken outside the hypostyle hall has allowed the outside limits of the platform under the colonnade to be determined. It is made of three layers of mudbricks of the same size, and the masonry bond is the same as those identified during the previous soundings. Therefore, the mudbrick platform was estimated to be 6 m long, 1.60 m large and 0.60 cm high (including the upper mudbrick layer on which the sandstone column bases are settled). It is thus more than reasonable to suppose that the north foundation platform of the hypostyle hall has the same characteristics.

In 2007 and 2009, soundings had been carried out outside the chapel, directly below the southern massif of the pylon and along the ramp leading to the way of Ptah. This year, further work was undertaken to compare the constituent elements of both massifs of the pylon adjacent to the first door of the sanctuary. A new sounding was started directly below the north massif and the ramp, the structure of which could be thus further studied.

This led to the discovery, below the layers of bricks which are visible in the facade, of a row of bricks in a wide overhang (abutment) consisting of four alternate layers of headers and stretchers. This narrow overhang seems to be part of a wide foundation platform extending on both sides of the ramp, and supporting the massifs of the mudbrick pylon and the stone gate of the sanctuary.

Sounding undertaken east of the second gate of the chapel of Osiris Wennefer Neb Djefau © C. Giorgi.

The XXVIth dynasty enclosure wall and a wall made of stamped bricks with the name of the High Priest Menkheperre.

The area behind the naos, already cleared in 2007, was reexamined this season in order to better determine the limits of the enclosure wall. Preserved on 29 layers at that place, this wall shows a bond with alternate courses of headers and stretchers including infill in some courses. It is 1.40 m wide and at least 12.7m long.

At the southern corner of this wall, on the surface of the mudbrick wall cut by the foundation trenches of this wall and the perpendicular wall intersecting it, around 10 bricks of relatively large size (40 x 20 x 12 cm), were discovered in their original position. They all show an almost standardized stamp. The wall visible in the trench section seems to extend according to an east-west axis. Its dimensions and its very probable southward extension remain to be defined. As the brick stamps mention the name of Menkheperre, son of the Theban king Pinedjem Ist and High Priest of Amun at Thebes around 1039-990 B.C., this wall could be part of or mark the limit of the precinct wall of the temenos of the domain of Amun in the XXIst dynasty, the construction of which is mentioned by the stela Cairo T.R. 3/12/24/2.

Stamped bricks with the name of the High Priest Menkheperre © C. Giorgi.

Moreover, at the south-west corner of the service room, a sounding was undertaken where the wall was badly destroyed, before the restoration was carried out. The upper layers of the wall show a

simpler bond pattern than in the lower levels. Several phases of restoration are visible, with additions of fired bricks, limestone chips, pottery sherds and mouna.

Excavation of the berm outside the chapel

Another operation was carried out near the ramp leading to the chapel, as a continuation of the the 2007 and 2009 seasons. Work continued on the berm along the paved alley leading to the temple of Ptah, in the direction of the chapel of Osiris Neb neheh. During this sounding, carried out by A. Rabot on a 18 m^2 surface, two sectors were cleary identified: in the southern part were found a series of superposed, small structures (low walls), made of mudbricks or reused and crudely cut blocks, in connexion with fireplaces and ash deposits; the northern part was an apparently unorganized area interpreted as a landfill made of a regular series of layers. In these two areas, many blocks, loose or built into low walls, were found; some of them were inscribed (carved or painted), including one datable to the reign of Sesostris Ist.

Conservation work

The restoration of the XXVIth dynasty mudbrick enclosure wall of the chapel was continued this season under the supervision of H. el-Amir, according to the proposal submitted in 2009 and undertaken in 2010. The southern part of the enclosure wall of the chapel has been rebuilt. In addition, with the collaboration of Antoine Garric, stonecutter at the CFEETK, the lintel of the naos has been restored and the building structure has been reinforced by a metal frame.

Ceramic studies

The studies on the ceramic material from the site have been carried out by C. Defernez and St. Boulet. One of the main research axes was the further analysis of the ceramic material collected in 2006 and 2010 during the excavation of the thick red layer under the large mudbrick building at the back of the Saite chapel. The heterogeneous nature of this material had been made obvious from previous observations and the analysis made this season has confirmed this statement. It seems well established that elements datable to the XXVth dynasty (terminal phase) and pieces characteristic of the first part of the XXVIth dynasty are both present. The local/regional ceramic production of the VIIth century B.C., even of the early VIth century B.C., is primarily represented.

Moreover, the study of several ceramic assemblages discovered in February 2009 under the foundations of the chapel has allowed important and coherent groups to be singled out, from a typological as well as a chronological point of view; these can be related to well-known Third Intermediate Period corpora. Their *facies* is notably similar to the material known from other sites occupied during the Third Intermediate Period (Tanis, El-Ashmunein, Heracleopolis Magna/Ehnasya el-Medina, Qau el-Kebir, even Elephantine, among others). As the reconstruction of vases (mainly jars) could not be completed this season, a more precise dating of these assemblages remain difficult. However, through comparison with the documentation available from other sites, it seems possible to ascribe several groups to the second part of the XXIst dynasty or the early XXIInd dynasty - parallels can be made to shapes related to D.A. Aston's phase B at Elephantine (XXIInd-XXIVth dynasty); all the more so if we consider that remains from the XXIst dynasty have been found in the area (cf. *supra*).

In addition to the thorough study of this material, a brief examination, followed by a selective separation of the numerous fragments collected during the excavation of the berm in front of the

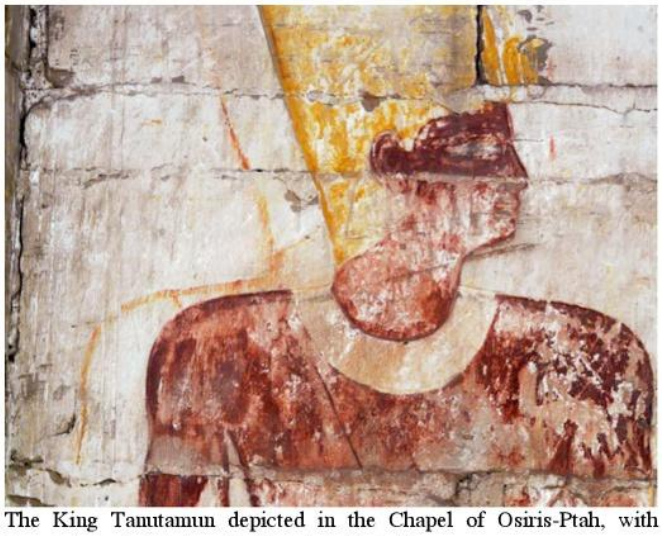
chapel has led to the identification of a large collection of pots of Hellenic tradition (Coptic sherds and earlier intrusive elements datable to the Late Period were also identified). Among the pottery sherds found during the excavation of the silt layers of the berm, were included many cooking pots and fragmentary jars characteristic of the IIIrd/IInd and Ist cent. B.C. Among the most significant were *cacabai*, *lopades*, flared cups with inturned rim, convex bowls known as *echinus bowls* and fragments of jars and other vases (kraters) with floral or plant motifs painted in black. The containers, easily recognizable from their coarse or fine, brownish Nile clay, belong to well-known types used in the Egyptian *chora*. Some clearly identifiable series of amphorae can be dated from the second half of the IInd cent. B.C. to the Ist B.C. or the early Roman Period.

Final corrections of the epigraphic drawings before publication

The checking of the drawings of the northern Osiris chapels have been continued by L. Coulon and Kh. Zaza, the latter being in charge of doing the last corrections. A common graphic chart has been established for the different publications of Osiris buildings currently in progress. After this last series of corrections, the plates for the publications of the chapels are expected to be completed by 2012-2013.

The chapel of Osiris Ptah-Neb-Ânkh

During the same campaign, an epigraphic survey was carried out in the chapel of Osiris Ptah-Neb-ânkh. Mr. Essam Nagy was representing the Supreme Council of Antiquities under the direction of Mr. Ibrahim Soliman. All the reliefs of this chapel, located near the Xth pylon, were drawn by A. Guillou and Fr. Payraudeau. The kings depicted in the decoration are Taharqa and Tanutamun, whose names had been superficially erased during the XXVIth dynasty. The chapel is composed of two rooms, the first one more specifically devoted to Amun, the second one to Osiris-Ptah.



The King Tanutamun depicted in the Chapel of Osiris-Ptah, with preparatory sketch drawing in red on the left.

On some walls, the paintings are very well-preserved. In some places, the preparatory drawings, painted in red or black, are still visible.

A preliminary cleaning of the area surrounding the chapel has been undertaken and the vegetation has been removed. A mud brick wall appeared at almost 10-15 meters from the west exterior wall of the chapel and could be part of its enclosure wall.

Several loose blocks coming from the chapel and kept in foreign museums are currently being studied. Moreover, Fr. Payraudeau has continued the systematic survey of Tanutamun's blocks in the Cheikh Labib storeroom.

The Chapel of Osiris of Koptos

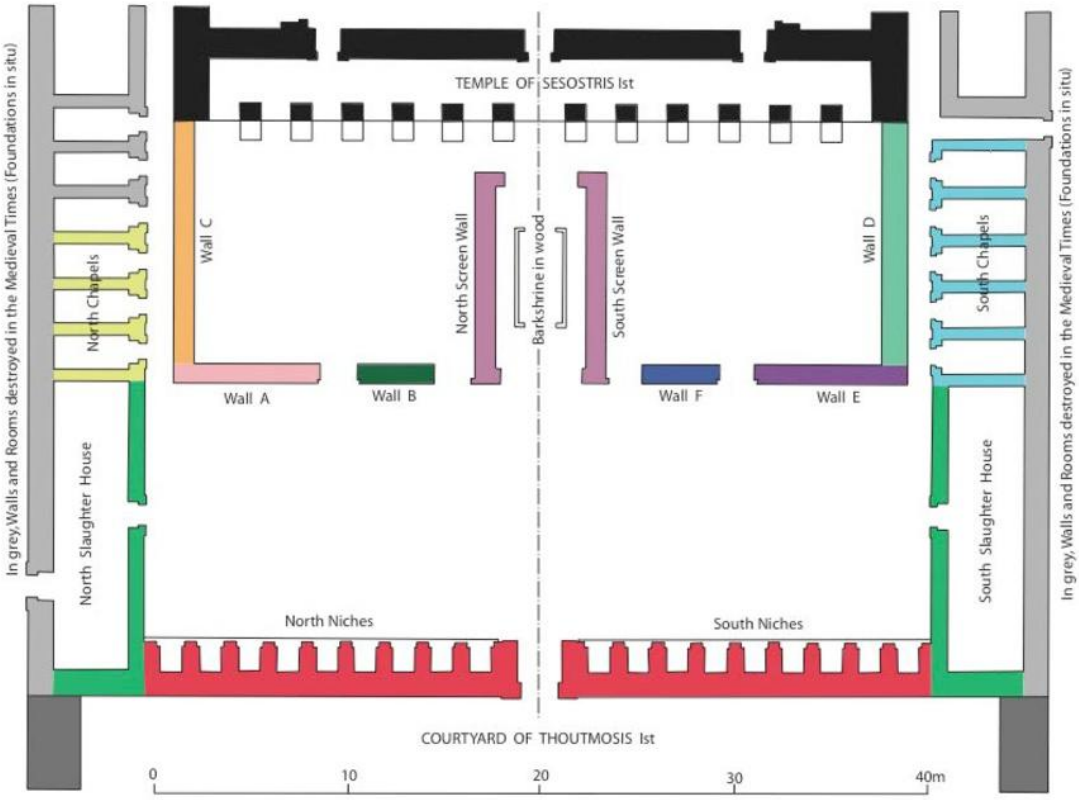
The checking of the drawings of the chapel of Osiris of Koptos, prepared during the epigraphic survey of the chapel (work started in 2006 under the direction of Fr. Leclère), has been carried out by L. Coulon and A. Guillou. The last corrections remain to be done before publication.

1.5. History and development of Amun-Re Temple until the New Kingdom

1.5.1. The monuments of Amenhotep I (L. Gabolde, J.-Fr. Carlotti)

The mission took place from February 4th to March 3rd 2012. The aim was to insure the global plan of the buildings which stood in the central part of the temple. They occupied the exact area of the present rooms of Hatshepsut, the VIth pylon, and the northern and southern chapels of Amenhotep I.

The plan of the structures is now 95% complete (see below), but some unsolved questions remain, concerning, for example, with the exact position of wall B.



We intend to propose, within few months, a definite plan which we will forward to the CFEETK. We must insist that the only reliable data for the plan and elevations of the monuments of Amenhotep I are those in our reports (present or to come) and that any other sources will provide only partial, incomplete, or not validated (and probably false) plans and elevations, disconnected from the archaeological data on the ground.

For the assemblages, we have dealt first with the small niches. The fine checking showed that we should modify the previous assemblages; a definite solution has been found. For the northern niches, a

satisfying composition has been reached. For the southern, it remains less certain. The series of 8 lintels to the north and 8 lintels to the south is definitely established.

Between the niches, a monumental gate, probably part of a small pylon, provided the entrance to the first court.

It has been necessary to make a new arrangement of the remains of the walls of the two slaughter-houses. The new proposition might be considered as the definite one.

The assemblages of the side walls of the chapels to the north and to the south have undergone minor modifications and additions.

Walls A, B, and F (one block) have not been modified. Wall C is still not completely assembled, with around ten blocks not yet placed. A block was added to wall E and few blocks changed in a register on wall D.

This façade seems to have had a very specific aspect, with unprecedented features: wooden doors, framed with wooden claustra, like some sort of *mucharabieh*, and which may have corresponded to what ancient Egyptians called *sebekhet*.

The proposed reconstruction of the so-called copy of the "chapelle blanche" (in fact a peripteral chapel with 6 pillars in the façade and 7 in the length) can be considered as fixed: less than 5% of the blocks are preserved and there is no possibility to physically reconstruct and restore it.

A presentation of the monuments of Amenhotep I at Karnak and of the possibilities of reconstruction has been given to H.E. the State Minister for Antiquities Pr. Dr. Mohammed Ibrahim Aly Sayed, insisting on the fact that the complete set of monuments should be reconstructed altogether and we expressed the preference that the monuments remain at Karnak.

For the publication of the first volume of the monuments of Amenhotep I at Karnak, devoted to the calcite chapel, the drawing of the plates have been checked on the original.

1.6. Varia

1.6.1. The Priest's Quarter (A. Masson)[14]

This short mission, which took place from the 7th till the 29th of October 2012, focused principally on various verifications to prepare the final manuscript on the Priests' Quarter. It was also the opportunity to make some new drawings, which were eventually inked, as well as photographs to complete the study of the material from this sector. This documentation was carried out on objects and ceramics originating from the recent and ancient excavations led to the east of the Sacred Lake. They are kept in the magazines of the Sacred Lake, in the Cheikh Labib A, Cheikh Labib B and in Abu Djud.

Ceramics

Several ceramics coming from closed contexts which had not been looked at thoroughly so far were drawn and studied.

The first context is the filling of a bread oven located to the rear of House VIII of the Priests' Quarter (fig. 1 n° 1-2). This bread oven was closed before the reorganisation of the kitchen of the

[14] My thanks go first of all to the Director of Luxor and Upper Egypt Mansour Boraik, to the Director of Karnak temples Ibrahim Soliman and to the Director of the USR 3172 of the CNRS Christophe Thiers for authorizing this study and for the good working conditions. For their help, punctuality and availability, I wish to thank the inspectors who worked with me in the magazines of Karnak: Wahid Youssef Bilal in the magazines of the Sacred Lake (8 to 10 October), Sa'ad in the Cheikh Labib A (11th of October) and Mahmoud (14th and 15th of October).

house. This context provided a homogenous material typical of the transition between the Saitic and Persian dynasties (fig. 2). The upper part of a jar or a bottle in marl clay, presenting a burnished surface, is particularly characteristic of this period: the slightly everted neck ends with a low double ridge (fig. 2 n° 5).[15] This dating is consistent with the numerous sealings which were discovered within the structure (fig. 1 n° 3). Most of them mentioned the name of a priest who lived around the end of the XXVIth dynasty.[16]

The second studied context was the filling of six ovens from the "oriental magazines", located on the southern bank of the Sacred Lake, directly to the west of the Priests' Quarter and to the east of the magazines of Psammuthes. The two levels of ovens[17] from the partial excavations of the south-east corner of the offering magazines provided material typical of the Late-early Ptolemaic Periods (fig. 3). The bulk (fragments of dokka, of a kiln's lid, a small cup-lid etc.) can not be dated more precisely. However some elements indicate a context not anterior to the IVth century. For example, the jar with a rolled rim (fig. 3 n° 2) is made of a fabric which does not appear before the IVth century.[18] The specific profile on the "incense cup" is particularly common in the Ptolemaic Period[19] and probably do not appear before the end of the Late Period (fig. 3 n° 4). This dating would correspond to the period of renewal of the magazines located further west - the magazines of Psammuthes – under the XXIXth dynasty. Only further investigations of the stratigraphy of the oriental magazines would allow this dating to be confirmed.

Vessel in faience

Fragments of a faience vessel discovered during the new excavations (Zone 7) of the Priests' Quarter and kept in the magazines of the Sacred Lake (MLSA) were drawn (fig. 4). A few elements of a faience vessel found during the previous excavations of the seventies were recovered in the Cheikh Labib A and were documented (fig. 5).

Verifications in the Cheikh Labib B

Various verifications were made in the Cheikh Labib B where the objects from the excavations led between 2001 and 2007 in the Priests' Quarter are kept. These verifications focused essentially on weights and metallic objects. It was possible to weigh each one of these objects with an electronic scale.

Inventory of objects previously kept in the Caracol

The photography taken in 2006 before the transfer of the objects from the Caracol to the new magazines of Abu Djud had not been precisely recorded. A more precise list of the pictures of the objects and ceramics from the old excavations of the Priests' Quarter was provided to the archives service of the Centre. This list gives the following information: inventory number of the picture; inventory number LS of the object; quick description; context of discovery; publication details; and the inventory number of older pictures taken by A. Bellod. These objects are included in the coming publication on the Priests' Quarter. Two seal impressions from the excavations of the Chapel of Akoris by J. Lauffray were also identified. They were added to the end of the inventory.

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[15] A. Masson, "Persian and Ptolemaic ceramics from Karnak: change and continuity", *CCE* 9, 2011, p. 276-277, fig. 43-44.

[16] A. Masson, "Un nouvel habitant de la rive est du lac Sacré à Karnak: le prophète du pieu sacré Pa-sheri-n-aset", *Cahiers de Karnak* 13, 2009, p. 345-357.

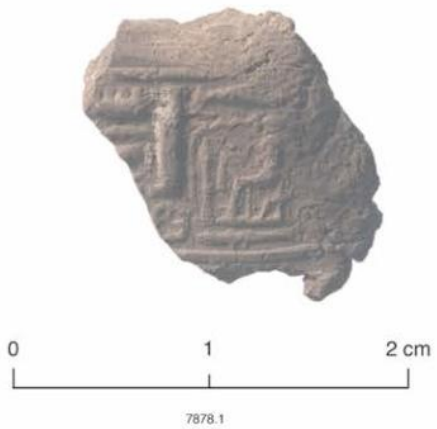
[17] Ancient state = state 1 (ovens ST19 and ST20); recent state = state 2 (ovens ST14, ST15, ST17 and ST18).

[18] D.A. Aston, *Elephantine* XIX. *Pottery from the Late New Kingdom to the Early Ptolemaic Period*, *ArchVer* 95, Mayence, 1999, p. 6 et 282 (pâte K200); A. Masson, *CCE* 9, 2011, p. 279, fig. 66.

[19] A. Masson, *CCE* 9, 2011, p. 272, fig. 15-16.

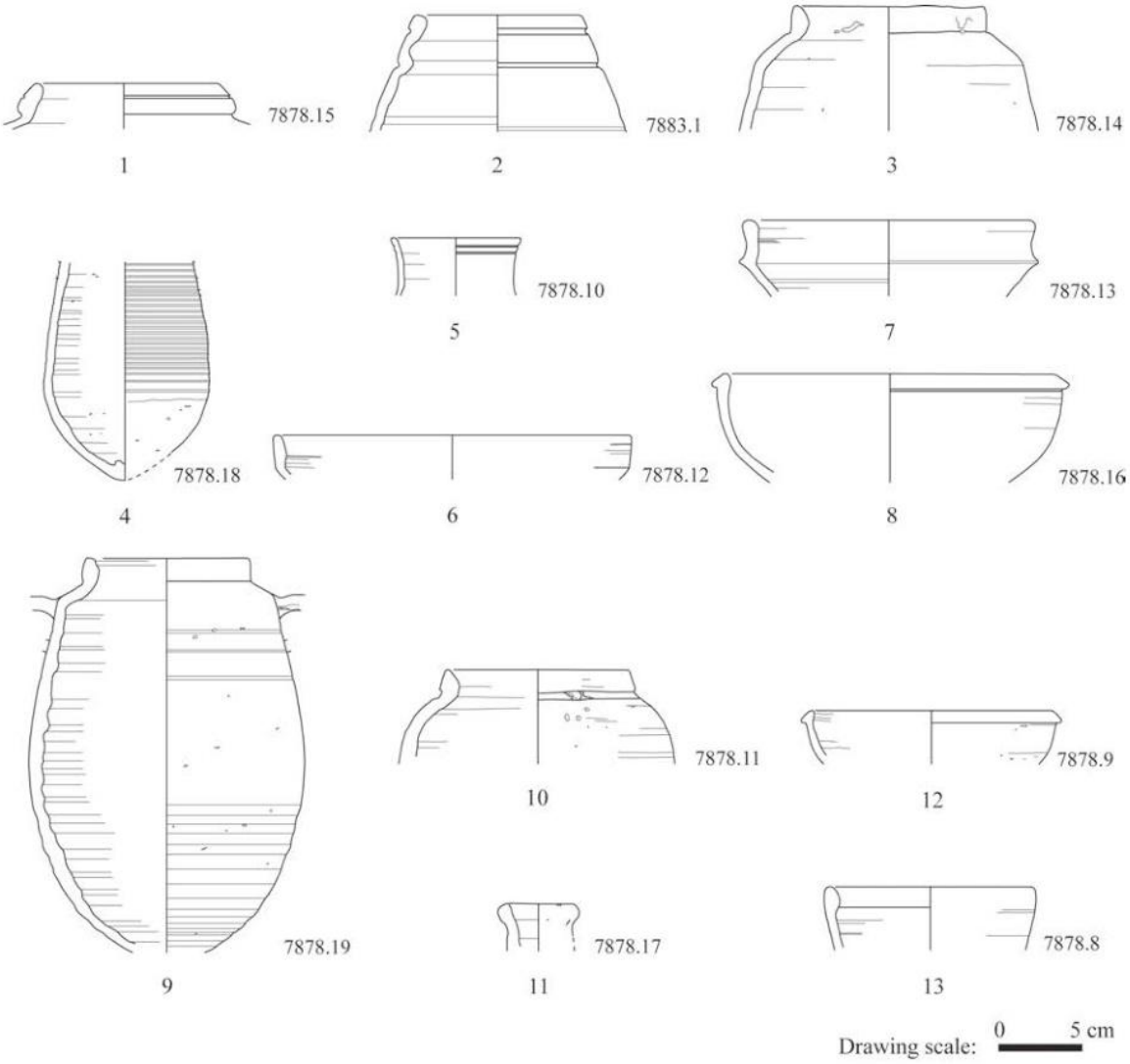
1. State 1 of the rear space of the House VIII – Plan and section scale 1/50

2. Oven ST30, from the south - © Cnrs-Cfeetk n°108747



3. Example of sealing from the filling of ST30 - © Cnrs-Cfeetk n°11530

Fig. 1. Oven ST30 to the rear of the House VIII



1. Upper part of a jar with a double rim in M1? (burnt) (Late Period-Ptolemaic period)

2. Upper part of a jar with a modeled rim in M1

3. Upper part of a jar with a rim with an internal buldge, quite marked shoulders, in M1 (Late Period)

4. Lower part of a jar with a rounded base, in M3; beginning of a handle visible (not before the end of the 26th-beginning of the 27th dynasty)

5. Upper part of a necked jar or a bottle, in M1? (burnt); double ridge rim; external surface burnished (end 26th-early 27th dynasty)

6. Upper part of a large bowl, in M1? (burnt)

7. Upper part of a carinated bowl in M1 (25th- early Ptolemaic period)

8. Large bowl with an underlined rim in M1; external and internal surfaces burnished (end 26th-early 27th dynasty)

9. Jar used as a cooking jar, in N1; cream yellow slip on the external surface imitating jars in M1; lower part of the body and especially the base are burnt (26th dynasty)

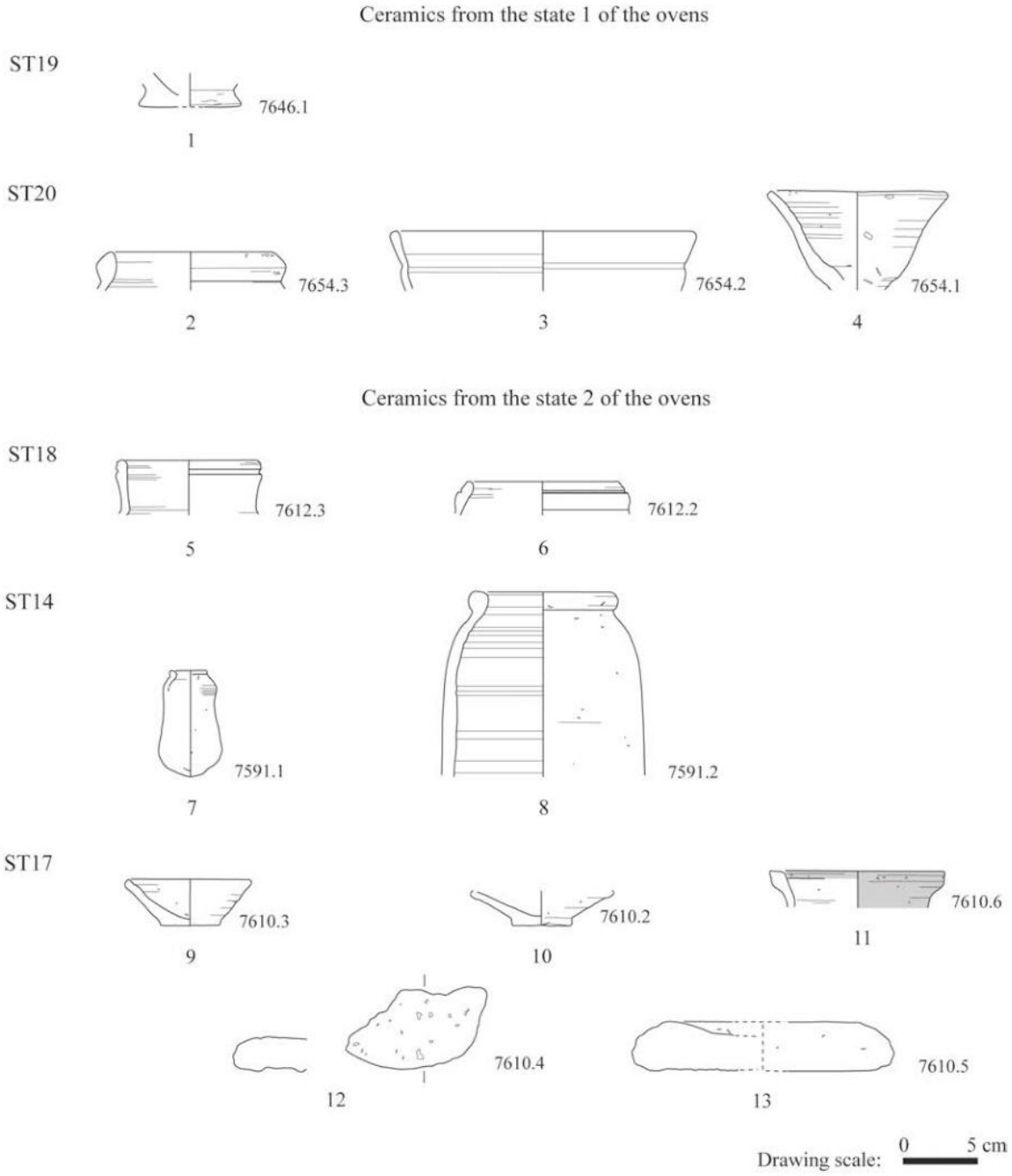
10. Upper part of a jar with a triangular rim, in N1

11. Neck ending with an external buldge, in N1?; smoothed external surface

12. Convex bowl with an underlined rim, in N1

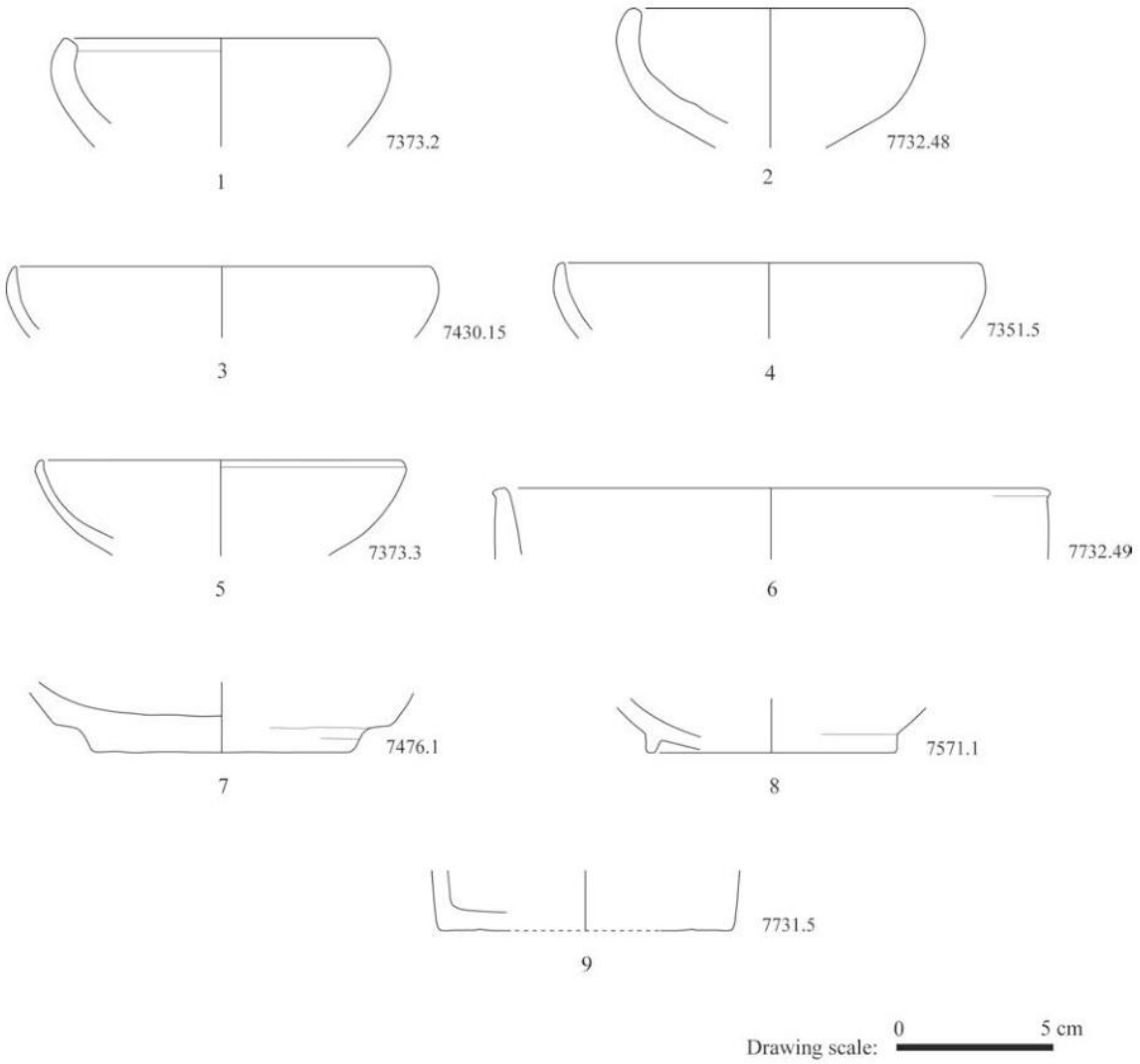
13. Cup with a rim with an internal buldge in N1

Fig. 2. Ceramics from the filling of the oven ST30 (rear space of the House VIII)



1. Base of an "incense" cup in N1; no burnt traces visible
2. Upper part of a jar with an external bulge in M4 (4th-3rd centuries)
3. Rim of a carinated bowl in M1
4. Upper part of an "incense" cup, in N1; no burnt traces visible (end of Late Period-Ptolemaic period)
5. Upper part of a necked jar with an underlined rim in M1 (late TPI-early Ptolemaic period)
6. Upper part of a jar with a double rim in M1
7. Miniature of a sausage jar in Nile Clay (complete)
8. Upper part of a jar with an external rolled rim, in N3
9. Small cup-lid in N1 with a flat string-cut base; traces of burnt on the external surface
10. Small cup-lid in N1 with a flat string-cut base
11. Upper part of a necked jar with a rim with a low double ridge in N1; red slip on the external surface and internal rim
12. Fragment of an ovale bread plate in N4 (not before 4th century BC)
13. Kiln's lid in N4; traces of cream slip on the external surface; diam. sup to 56 cm

Fig. 3. Ceramics from the filling of the oven of the oriental magazines



1. Rim of a small convex bolw in faience; light blue glazed external and internal surfaces
2. Small convex bowl in faience; ; light blue glazed external and internal surfaces (closed to 7373.2)
3. Rim of a convex bolw in faience; turquoise blue glazed external and internal surfaces
4. Rim of a convex bolw in faience; greenish blue glazed external and internal surfaces
5. Upper part of a convex bolw in faience; turquoise blue glazed external and internal surfaces
6. Rim? of a vessel in faience; green glazed external and internal surfaces
7. Flat base of a vessel in faience; turquoise glazed external and internal surfaces, except the underside which is cream glazed
8. Ring base of a vessel in faience; turquoise glazed external surface
9. Flat base of a vessel in faience; turquoise glazed external and internal surfaces

Fig. 4. Vessel in faience from the Zone 7

1. Small cup with a flat base in faience; turquoise glazed external and internal surfaces

2. Small cup with a fine ring base in faience; turquoise glazed external and internal surfaces

3. Small cup (?) in faience; turquoise glazed external and internal surfaces

4. Small convex cup with a flat base in faience; turquoise glazed external and internal surfaces

5. Lid in faience; turquoise glazed external and internal surfaces

Fig. 5. Vessel in faience from the old excavations

1.6.2. Pottery from the excavations of the courtyard of the IXth pylon (C. van Siclen)

Four shorts stays[20] were devoted to the continuation of the study season in preparation for publication of the excavations in the court. The work has consisted of examining and recording as necessary pottery stored on the concrete slab to the north of the west tower of the Ninth Pylon. The pottery examined came from all periods present in the Court (Second Intermediate Period through the late Roman Period). Most of this pottery comes from fill and dates to the start of the New Kingdom.

On 26 February, a visiting MSA inspector noticed something in the floor (or subfloor) of the Roman villa, just below the level of the building's surviving mud brick south wall. On further examination this proved to be a small sandstone statue lying parallel to the wall. The pottery sherds found around the statue indicate that it was buried at about the time the villa was built, ca. AD 330. The statue was subsequently removed from the ground and transferred to the Sheikh Labib magazine. The statue is incomplete, lacking both its head and its lower parts from above the knee. The surviving piece is about 38 cm in height and the original statue may have been 75-80 cm high. The sandstone seems to have been covered with plaster (now mostly gone) to give it a white appearance. The statue shows the figure a man standing with his left leg forward and it has a plain back pillar. The right arm of the man hangs down by his side but it is now mostly missing although the right hand is present. The left arm of the man is bent in front of the body and the left hand holds what seems to be a flower. This type of statue type is well-known, and the figure is (or was) clothed in a short-sleeved t-shirt, a wraparound skirt and a fringed (and pleated) shawl. The edge of this shawl is also held by the figure's left hand. Over 130 examples of this type of statue (including some holding flowers) are known and they generally date to the Ptolemaic Period, Third to First centuries BC. Without either a surviving head or an inscription, no closer dating is possible. For information on this type of statue, see: S. Walker, P. Higgs, *Cleopatra of Egypt from Myth to History* (Princeton, 2011), pp. 112-113, 180-183; R.S. Bianchi (ed.), *Cleopatra's Egypt, Age of the Ptolemies* (Brooklyn, 1988), pp. 66-67, 124-127, with earlier references.

1.6.3. Landscape evolution and palaeohydrological reconstruction of Ancient Karnak (A. Graham)

The 2012 season took place between 25th February - 5th April and the team consisted of Angus Graham, Morag Hunter, Sarah Jones, Aurélia Masson, Marie Millet, Benjamin Pennington and Kristian Strutt. The data from our augering has led us to the interpretation that Karnak evolved as an island in the Nile (Bunbury *et al.* 2008; Graham 2010a, 2010b; Graham and Bunbury 2005). However, this has recently been disputed with alternative hypotheses put forward by Matthieu Ghilardi (Ghilardi and Boraik 2011) and Luc Gabolde in his recently defended habilitation (2011), *Karnak, Amon-Rê, la genèse d'un temple, la naissance d'un dieu*, publication forthcoming.

Our aim in 2012 was to provide a further context to our previous geoarchaeological and geophysical work at Karnak and further our understanding of the geomorphological origins and the subsequent development of the site and thus further discussions with our colleagues. We carried out two long, deep, ERT profiles at Karnak (P14 and P15) (see table 1 and figure below) with the aim of recording resistance data throughout the Holocene fill. We also carried out two further augers AS39 and AS40.

[20] From 11 to 26 January; February 19 to March 8; 1 to 12 April; November 11 to December 6 2012.

Locations of ERT profiles, auger sites AS39-40 at Karnak (Background image © Google Earth).

Table 1 shows the length of the first level of readings recorded along each profile, the spacing of probes, the number of levels of readings taken and the depth of the lowest level of readings

ERT Profile No.	Length of profile	Spacing of probes	No. of levels	Depth of profile
P14	816m	4m	16	32m
P15	540m	4m	16	32m

Profile 14

P14 was carried out running from west to east starting close to the area of the Cfeetk offices and proceeding through the area between the Ptolemaic and Roman baths currently under excavation by our MSA colleagues, then through the gate cut by Henri Chevrier. The profile runs 70-80m to the north of the Amun-Re temple axis and again goes through a gate apparently constructed by Chevrier to the east and terminates just short of the road to the east of Karnak.

The ERT profile appears to show a number of sand bodies below the temple of Karnak that are interspersed with Nile muds (low resistance readings). Whilst the results of P14 need further ground-truthing, we have been able to match up a number of the high resistance readings with features that the profile crosses. Within the Amun-Re enclosure we passed directly to the south of the gate of Ramesses III and high resistance correlates with where the foundations of the gate would be. We also have high resistance readings behind the line of the embankment wall suggesting that the archaeology extends to the north of the current limit of the excavations of the Ptolemaic Baths.

To the east of the Nectanebo Wall we can clearly see the recent fill of the Legrain (Chevrier) drain, which we also saw in Profile 2 carried out in 2008 at North Karnak (Bunbury, Graham and Strutt

2008). Furthermore, immediately to the east of the Nectanebo enclosure the high and low resistance readings most plausibly represent a palaeochannel. A high resistance feature below and to the west of the wall is marked by a large low resistance feature to the east with a west–east slope. This supports our previous assertion that a channel existed to the east of Karnak. The slope revealed by the different resistivity of the deposits accords with the findings in the excavations of the Canadian Mission in this area of East Karnak (Orel 1991; Redford 1988).

We believe that our 2012 results further our interpretation that Karnak originated as an alluvial island in the Nile, but further work needs to be done to understand the geometry of the early island and subsequent landscape history of Karnak.

Profile 15

P15 was located across the complex at Karnak running in a locally north to south direction (fig. 1). The aim was to assess the deposits under the temple at Karnak, and to compare the results with P14, and P3 and auger AS33 from the 2008 season (Graham 2010b).

Results show mixed low resistivity measurements along the first 130m of the profile, corresponding to the area to the north of the main temple. Massive and deep high resistivity values are found corresponding to the area from the central axis through the Bubastite Gate and towards the southern block yard. A shallower area of high resistivity was measured corresponding to the area parallel to the extent of Khonsu temple. This appears to correlate with the archaeological deposits observed in 2008 and reveals the extent of archaeological features in this area under the modern block yard.

AS39

AS39 was carried out at the base of a SCA/MSA excavation under the direction of Mansour Boraik on the south side of tribune in front of the First Pylon and immediately behind the embankment wall. The height at the top of the auger is 70.85m a.s.l. and terminating at 67.0m a.s.l. The aim was to investigate the sedimentology at this location in order to shed light on landscape change at Karnak and specifically to further our understanding of the process and timing of the construction of the embankment wall.

The excavated sections provided evidence of a cut dating to the Late Roman Period made behind the wall, which we believe may have been an attempt to get to a foundation deposit at the corner of the tribune and the embankment wall. Such practices have been observed in the temple of Karnak in several locations. Unfortunately this cut may have destroyed any foundation trench that might have been present to the East of the embankment.

From the top of the auger down to 68.86m the ceramic fragments were mainly typical of the New Kingdom and should not be earlier than Thutmosis I. In the next 0.4m the material is more Middle Kingdom-New Kingdom. Below this, until the termination of the auger, ceramic fragments are less frequent and medium to medium-high rolled. From the identified fabrics, the bulk of the material is from the Middle Kingdom-early New Kingdom. The implications for the history of the construction of the tribune and the embankment wall need to be further explored.

AS40

AS40 was carried out 314m along profile P14 and 6.4m perpendicularly to local south from the profile close to the Ramesses III gate north of the Fourth pylon. It commenced at 74.71m a.s.l. and terminated at 73.05m a.s.l. due to an obstruction. The aims were to ground-truth P14 in this area and provide more information on the history of the Karnak landscape. The moderately-sorted sediments and the range of clasts within the sediment which included ceramic fragments, sandstone, limestone, granite, dolerite/basalt, flint, rhizocretions and bone are consistent with anthropogenic deposits that might be expected within the temple.

In the upper 1.3m the ceramic material was mostly dateable from the Late Third Intermediate Period-Early Ptolemaic Period, with some later material also recorded. A few sherds were also dated to the New Kingdom. In the lower 0.36m the material appears to date mainly to the New Kingdom. Oolitic limestone, which is attested in workshops/settlements at Karnak from the Middle Kingdom-Early New Kingdom, was also found.

Our short 2012 season at Karnak was extremely productive and we hope that future seasons will continue to reveal and clarify the complex depositional history of Karnak.

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2. CONSERVATION AND RECONSTRUCTION PROGRAMMES

2.1. Conservation (L. Pieri)

For the Ptah Temple programme, see above.

Treasury of Shabaka

As part of her doctoral thesis entitled « Archaeological study of a monument of the XXV Dynasty in Karnak: the Treasury of Chabaka », the excavation conducted by Nadia Licitra recovered several elements of great interest: various polychrome sandstone lintels and doorposts, and fragments of painted plaster.

Sandstone lintel[21]

One of the polychrome sandstone lintels discovered during the previous season was in a critical condition preventing removal: it was broken into several fragments with multiple chips and globally disintegrated. Before any handling, pre-consolidation parts powder to acrylic resin (Paraloid B72) was performed, and the remains of polychromy fixed with the same product.

After localization of small fragments on chart, they were taken to the CFEETK laboratory to be consolidated with ethyl silicate (Wacker OH100 50% in the White Spirit). The three large fragments could then be transported under a tent structure to be treated with the same product, then sheltered from the sun and evaporation under plastic sheeting and cardboard for 3 weeks, the reaction time of the product.

Consolidation with ethyl silicate.

Fragments of painted plaster

At the very end of previous season's excavation an exceptional ensemble of painted plasters was also uncovered. What is left are fragments of a white under layer and a paint layer, in some places pigmented paste elements embedded in the plaster. At places, organic fibers (wood?) and textile fabric imprints were discernible in the under layer. The plasters were protected with a fabric and covered with sand and a wooden case.

[21] Conservation treatment was conducted by independent conservator Juliette Fayein, with assistance of CFEETK conservator Lucie Pieri.

The extraction of these elements was conducted this season by the Egyptian IFAO conservator, Hassan Mohammed, with the occasional assistance of the CFEETK conservator. After clearing the soil, the stratigraphy of paint layers and fragments could be studied: some fragments fell face first against the ground, and several were superimposed. This preliminary study allowed us to make decisions on where to cut the soil and fragments in order to extract them.

There are two sets of fragments, one consisting of fragments of beams facing the ground with geometric patterns: blue and white fish flakes, red and white checkerboard, and a lozenge, mostly fallen with the paint layer underneath. The other set could be a ceiling, the design of it is very chaotic: we discern a sun and the wing of a falcon.

Left: white under layer; Right: pasty inclusions. The fragment is facing downward.

Fragment of a wing (?) cleaned and consolidated with Paraloid B72.

Both sets were cut into several pieces. After consolidation of the paint layer with Paraloid B72 (5% in acetone), the fragments were covered with pieces of gauze glued with melted cyclododecane to form a temporary rigid frame allowing safe extraction. The earth was then sawed about 5cm under the plaster with various tools and then slid on a thin plank.

Fragments with the paint layer downward were then completely released from the soil and turned face upward. The thin layers were consolidated and a new mortar consisting of sand and acrylic resin (Paraloid B72) was applied in order to be able to manipulate them safely.

Gauze and cyclododecane frame applied to temporarly consolidate before extraction.

Sawing of a fragment.

2.2. Reconstruction programmes (A. Garric)

Reconstruction in the Open Air Museum of a limestone building dated from the reigns of Hatshepsut and Thutmose III: The *Netery-Menu*

The rebuilding of the *Netery-menu* walls was the main activity of the season 2011-2012. This work was performed in several stages to allow the crane to cover the entire area under construction. All lifting and moving of blocks were made using the CFEETK crane.

Each phase of work was formed by laying a paving area required to complete reassembly of the walls therein.

The final coatings during their execution © Cnrs-Cfeetk/A. Garric.

Before each stage of paving installation, the surface to be covered was also sealed with a layer of tar, preventing any capillary rise in the future. The paving is now complete and thus covers the entire foundation. A projection of a few centimeters in height, carved in the pavement, marks the location of the walls. This projection, through large horizontal strips cut at its base, has also allowed a millimetric levelling of the general ground level. Note that the pavement is made of large slabs of sandstone (2m x 1.5mx 0.11m approx), cut according to the ancient method that uses each slab to its full dimensions, creating a non-regular design called *opus-incertum*.

The large sandstone slabs in *opus-incertum* design © Cnrs-Cfeetk/A. Garric.

The projections carved in the pavement marking the location of the missing walls © Cnrs-Cfeetk/A. Garric.

Many of the building blocks were cut in ancient times into several large fragments to be reused. Others were also dissociated by the presence of natural fractures. Prior to rebuilding, it was therefore necessary to restore their original dimensions by reassembling their fragmented elements. About twenty blocks were treated and received this structural consolidation: adjustment of the different parts, drillings and stainless steel dowels insertions, resin injections and sometimes restitution of the *resting surface* by a masonry base. The blocks thus treated can finally regain their original location within the walls.

Reassembly of the walls of the building (consisting of one hundred blocks of several tons each) began in September 2010. The *Netery-menu* includes a total of nine walls, interconnected, except for one (wall # 5) whose position is unknown. This will be rebuilt separately, just outside the building. The wall # 8, the only one with at least one block per layer, was used to determine accurately the original height of the building: 5.38 m under cover slabs.

Six walls are completed to date (walls # 1, 2, 3, 4, 6 and 8) and two others are still being assembled (the walls # 7 and 9). Only wall # 5 remains to be rebuilt, its foundation is ready.

Incomplete parts of the building are rendered by traditional masonry - made of bricks, rubble sandstone and lime mortar - which will receive a final coat the same colour as the old *facing*. This colour will be determined after testing different cleaning of *facing*. Restorers will conduct a homogenization final cleaning of all *facing* as ancient blocks, reused and stored in a variety of settings, sometimes show large differences in alterations.

In the end, a development of the reconstruction site will be performed: leveling and paving of the building contours and installation of a staircase creating a connection between the access way to the Open Air Museum and the anastylosis area.

Parallel to the rebuilding, a technical characteristics study was performed on all the *Netery-menu* blocks by a systematic survey of the elements related to technical implementation of the stone (traces

of different types of tools, their nature and their dimensions, remains of *slots* carved into some blocks that allowed the dismantling of the old building, etc.).

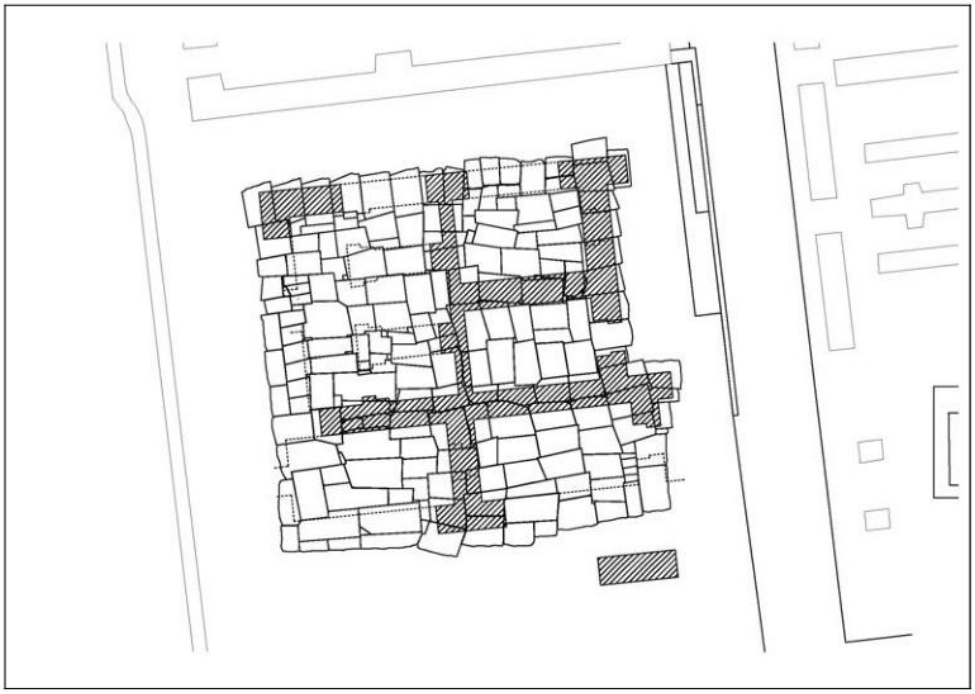
Part of wall # 5 © Cnrs-Cfeetk/A. Garric.

Final coatings and the flagstone paths © Cnrs-Cfeetk/A. Garric.

The stairway and the flagstone path during installation © Cnrs-Cfeetk/A. Garric.

A flagstone path during installation © Cnrs-Cfeetk/A. Garric.

Wall # 6 © Cnrs-Cfeetk/A. Garric.



New stone paving design of the reconstruction area © Cnrs-Cfeetk/V. Tournadre.

The Netery-menu at the end of the reconstruction programme © Cnrs-Cfeetk/A. Garric.

CFEETK stone wire-saw

The stone wire-saw is in use on a daily basis; it is operated by two Egyptian workers, specifically trained by the CFEETK for its use. The machine supplies the temple pavement, including the construction of the *Netery-menu*, which took more than 200 square meters of slabs. Its operation continues for different projects in Karnak Temple.

Chapel of Osiris Neb-djefau

Installation of 2 new stones: the last course of the doorjamb and the southern half part of the lintel. The façade of the chapel thus achieved again a significant part of its original architectural forms. This operation also allowed the installation of a metal belt (strapping) on its upper part. It is sealed in the upper surface of the chapel's last course and holds all the walls together. This will stop the opening of the walls and severely limit future movements of the chapel.

Chapel of Osiris Neb-djefau © Cnrs-Cfeetk/A. Garric.

Works with the CFEETK crane

- Medamud temple: the crane was used for about 20 days for the removal of about hundred stones for study purposes. The first layer of a monumental corniche has been temporarily assembled.
- Ramesseum: Assemblies of big fragments on the Ramses II colossus base; moving granite blocks for their storage on a bench "mastaba" (one month).
- Various lifting works in the temple of Karnak: removing ancient blocks on "mastabas" for their conservation.
- Training of two Egyptian crane operators.

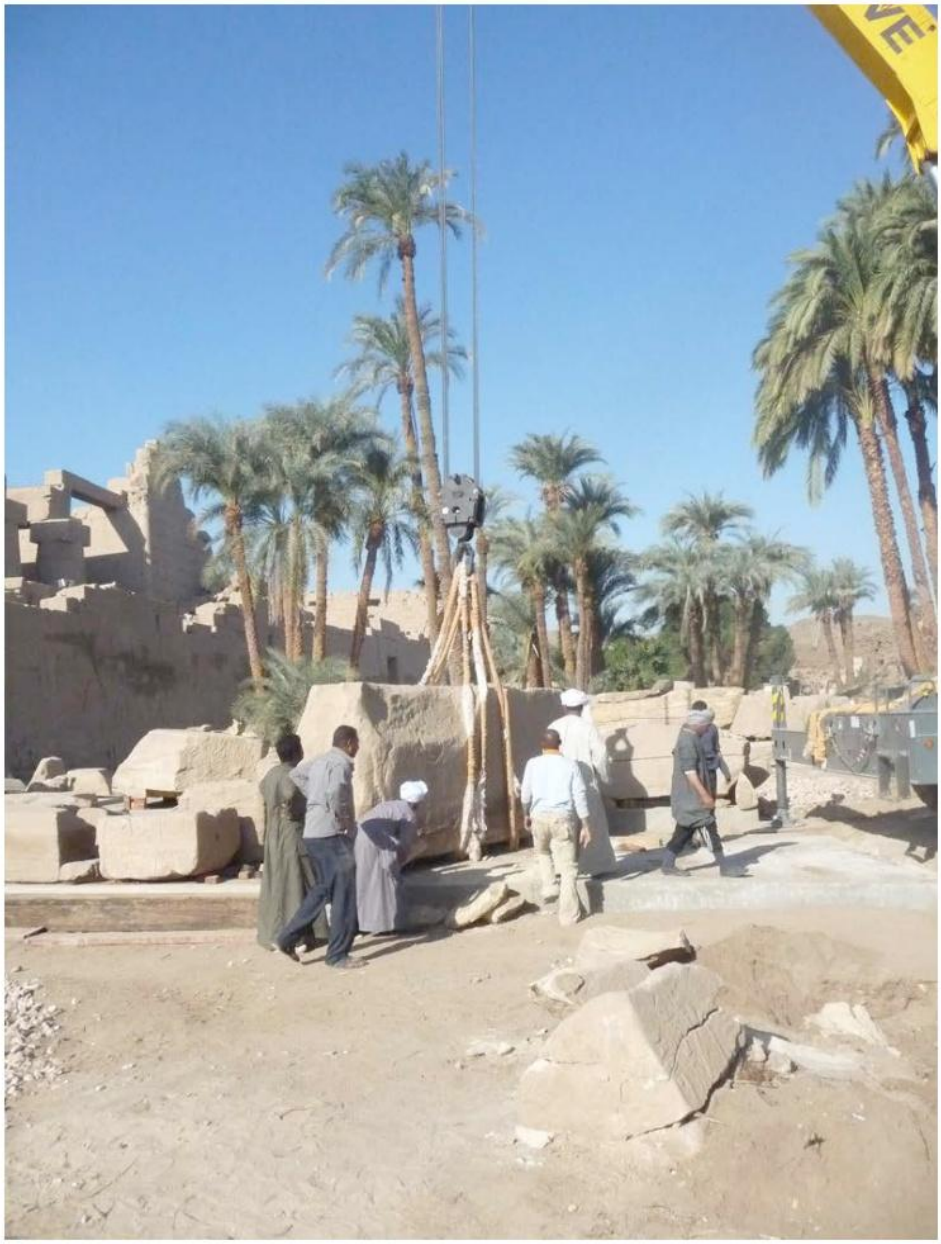
Research

Experimental archaeology and the preparation of an article on ancient construction technique: A. Garric, E. Laroze, "The technique of sawing joints in Ptolemaic sandstone masonry", forthcoming.

2.3. Site management

As previous seasons, conservation and restoration inside Karnak temple were achieved in order to better present the wall reliefs to the visitors; old mortars were replaced by new ones. In some parts of the temple, new flooring was added for the visitors.

To protect loose blocks from wet and salted soil, 5 large mastabas were built north of the hypostyle hall and east of the Open Air Museum. Many blocks which were lying on the ground are now stored on these benches. Most of them belong to the hypostyle hall.



Storage of architraves from the hypostyle hall upon a new mastaba © Cnrs-Cfeetk/Chr. Thiers.

Two new mastabas east of the Open Air Museum to store loose blocks © Cnrs-Cfeetk/Chr. Thiers.

3. Archives and scientific documentation

3.1. Archives databases (S. Biston-Moulin)[22]

3.1.1. Reorganization of archives and implementation of the second phase of the documentary project of the CFEETK

The first step in the reorganization of databases developed by the CFEETK is nearing completion. All data from the old database have been migrated to ArcheoGrid Karnak. Reprocessing of data continued this year and it will be completed in 2013. The new interface for acquisition and preservation of the documentation is now fully implemented.

The technical development of the public access to ArcheoGrid Karnak was delayed by institutional difficulties at the University of Bordeaux. We hope this can return to normal in 2013.

Alternatives are being studied to propose a public consultation tool as soon as possible.

With the completion of this first step of the work on the documentation of Karnak, the second step of the reorganization of the archives began in 2012 to establish a new database dedicated to organise and access more effectively the scientific information related to the temples of Karnak (photographs, facsimile, bibliography, general information about the object or relief, and the hieroglyphic text of the inscriptions).

This new database takes advantage of the information gathered during the last 45 years of work on the documentation of the CFEETK and offers a modern and efficient tool to access it.

Unlike ArcheoGrid Karnak, heir of the old CFEETK databases, which works on existence or absence of archives, this new database, connected to ArcheoGrid Karnak, operates via a systematic inventory of the documentation of the temples of Karnak.

This new database aims to make the documents accessible by specific indexes (names and epithets of deities, scenes types, elements of protocols, titles and names of individuals, toponyms, ethnic and places of worship and by attestations of general vocabulary).

This project called the Karnak Project (Karnak temples global index project) has been carried out since January 2013 in partnership with the University of Montpellier 3 (UMR 5140 of CNRS) with the support of LabEx Archimede (in connection with the project of Permanent Dictionary of Ancient Egyptian (DPEA).

For more details, see the full presentation of the Karnak project in the CFEETK Quadrennial proposal for 2013-2016.

3.1.2. Upgrading of the archives and search for new archives related to Karnak

The new scan of the glass photographs from Henri Chevrier's archives (from 1926 to 1954) kept in the CFEETK and their documentation continued this year as planned.

The Pierre Lacau archives related to Karnak kept at the Ecole Pratique des Hautes Etudes (EPHE) were scanned in 2010-2011 and are being documented to integrate soon the archives database.

The first part of a new series of negatives belonging to a photographic archive kept in Luxor was scanned last year by the photographic service and documented this year. The digitization of this very important archive will still require several campaigns.

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[22] Magdi Louis (MSA-Cfeetk), Cnrs trainees: Charlie Labarta (october 2011-january 2012; march 2012-jun 2012); Jérémy Hourdin (january-april 2012); Laurie Rouvière (september-december 2012); Émeline Pulicani (september 2012-january 2013).

3.1.3. Online Bibliographical Project

The project bibliographic CFEETK was opened to public in May 2012. The reorganization of the database archive of the CFEETK started in 2009 made necessary a unified bibliographic management tool. This bibliographic database is used as reference for all databases of the CFEETK.

To allow wider dissemination of the work on the temples of Karnak and to offer an online library that is as complete as possible, this database includes a consultation tool directly on the site and ability to download the pdf document. Resources available on other institutional sites are also taken into account. The online bibliographic project of the CFEETK now includes more than 1000 digitized open access resources and will be gradually expanded.

The opening to the public of the project was a success; since May 2012, the PDFs available on the website have been downloaded more thant 285,000 times.

3.1.4. Library of the CFEETK

The library of the CFEETK was enriched by approximately 250 books this year.

3.1.5. Website of the CFEETK

The public opening of the online bibliography led to a significant increase in visits to the website of CFEETK which hosted 400,000 visitors this year, an increase of approximately 60% compared to the previous year with more 900,000 visitors since the site was launched in March 2009.

List of researchers with direct access to a part of the archives of CFEETK

AZIM M., Architect-archeologist, Lyon (France)
BICKEL S., Egyptologist, Basel (Swiss)
BOUDHORS A., Coptic study, Paris (France)
BRAND P.J., Egyptologist, Memphis (USA)
BROZE M., Egyptologist, Brussels (Belgique)
CARLOTTI J.-Fr., Architect, Lille (France)
CHAPPAZ J.-L., Egyptologist, Geneva (Swiss)
COULON L., Egyptologist, Lyon (France)
DAVID E., Chargée d'études documentaires, Paris (France)
DEVAUCHELLE D., Egyptologist, Lille (France)
FROOD E., Egyptologist, Oxford (UK)
GABOLDE L, Egyptologist, Montpellier (France)
GOHARY J., Egyptologist, Arce (Egypt)
JOHNSON W.R., Egyptologist, Chicago (USA)
KARKOWSKI J., Egyptologist, Varsaw (Pologne)
LARCHÉ Fr., Architect, Paris (France)
LECLÈRE Fr., Archaeologist, London (UK)
LOEBEN Chr., Egyptologist, Hanovre (Germany)
LORAND D., Egyptologist, Cairo (Egypt)
MASQUELIER-LOORIUS J., Egyptologist, Paris (France)
MCCLAIN J.B., Egyptologist, Chicago (USA)
PREYS R., Egyptologist, Louvain (Belgium)

REVEZ J., Egyptologist, Montreal (Canada)
SOUROUZIAN H., Egyptologist, Cairo (Egypt)
VERGNIEUX R., Egyptologist, Bordeaux (France)
WIDMER, G., Egyptologist, Lille (France)

3.2. The scattered blocks survey

The inventory work of the loose blocks lying upon benches continued, using the same protocol as in the previous years: numbering on a piece of metal, schematic drawings, photography and incorporation into a database.

3.3. Epigraphic survey and archæological drawings

As during the last season, the epigraphic survey of Philipp Arrhidaeus bark-shrine, under the direction of Christophe Thiers, was done in the field by Pauline Calassou and Memduh Abdel Ghasul (MSA draftsman) who also trained students in field epigraphy.

3.4. Photographic department (J.-Fr. Gout, L. Moulié)

The programme of the 2012 season took place on schedule. The photographic survey focused on the inner walls of the Philip Arrhidaeus bark-shrine. The work is almost finished and will require some photographs to complete the survey.

A new photographic survey of the Ptah temple was started, especially for scenes which have been restored and which bear painted reliefs. This work will be published with the epigraphic survey.

The restoration, excavation and reconstruction programmes were also recorded:

- Temple of Ptah
- Treasury of Shabaka
- MSA excavations in front of the first pylon and potteries

The scanning of the oldest archives from Karnak continued.

3.5. Architecture and topography department (P. Zignani)[23]

In addition to the programme of the Temple of Ptah presented above, the service has been active in several programmes, specific to the Center but also in support of other missions.

Gate of the second pylon

In parallel with the mission of epigraphic study funded by the National Fund for Scientific Research of Belgium, the architectural survey of the Ptolemaic gate was completed, providing background material for a study of the largest door among all the preserved monuments around the Mediterranean Sea.

[23] During the season 2011-2012, the members of the CNRS team were: Pierre Zignani (architect-archaeologist), Lucie Amami (archaeologist, Cnrs trainee), Marie-Caroline Livatidis (archaeologist, Cnrs trainee), Marion Perot (architect, Cnrs trainee), Vincent Tournadre (surveyor), Pierre Tourvieille de Labrouhe (architect, Cnrs trainee); Mathieu Vanpeene (architect, Cnrs trainee).

Treasury of Shabaka

As last year, topographic support was provided for the survey and the studies conducted by Nadia Licitra (University of Paris IV).

Topography, coordinate general system

The entire network of reference stations throughout the domain of Amun has been checked and completed with an update of the system and a report by V. Tournadre: *Canevas polygonal des temples de Karnak, étude et ajustement du réseau*, CFEETK, 2012.

Cooperation with MSA and training

The service supports topographic and architectural survey at different excavations directed by the Director of Luxor Mansour Boraik, including the Roman Baths on the forecourt of the temple.

As part of this collaboration, training for MSA field collaborators in the drawing of archaeological structures with AutoCAD software continued.

4. Training programmes

4.1. Training

A training in AutoCad software was provided at the Center for MSA inspectors (see above). Training in field epigraphy was also provided (facsimile of scene at scale 1:1 on plastic film).

Similarly, French students (conservators, architects, Egyptologists) were welcomed to the CFEETK, allowing for successful training and practice in different programmes and fieldwork.

Inspector Essam Nagy Mustafa draws on a plastic film © Cnrs-Cfeetk/Chr. Thiers.

4.2. French language courses

With financial support granted by the French Cultural Center in Cairo, courses in French have been provided at the CFEETK office, particularly for several MSA inspectors and Egyptian members of the CFEETK. This should be repeated in 2013.

5. PUBLICATIONS AND LECTURES

5.1. Selected publications of the CFEETK members and associated missions (2012)

- AZIM M., *Karnak et sa topographie* II. *Les relevés anciens du temple d'Amon-Rê de 1589 aux années 1820, Monographie du CRA* 31, Paris, 2012.
- CHARLOUX G., *Le parvis du temple d'Opet à Karnak, TravCFEETK, BiGen* 41, Cairo, 2012.
- CHARLOUX G., MENSAN R., *Karnak avant la XVIIIe dynastie. Contribution à l'étude des vestiges en brique crue des premiers temples d'Amon-Rê*, Paris, 2011.
- BORAIK M., THIERS Chr. (ed.), "CFEETK Activity Report 2011": http://www.cfeetk.cnrs.fr/index.php?page=rapport-2011

- AZIM M., "La perception de Karnak du XVIe siècle au début du XXe : château, palais ou demeure royale, temple et résidence à la fois ?", dans C. Zivie-Coche, I. Guermeur (ed.), *« Parcourir l'éternité ». Hommages à Jean Yoyotte, BEHESR* 156/1, 2012, p. 23-48.
- BISTON-MOULIN S., "Le roi Sénakht-en-Rê Ahmès de la XVIIe dynastie", *ENiM* 5, 2012, p. 61-71: http://www.enim-egyptologie.fr/index.php?page=enim-5&n=6
- BISTON-MOULIN S., "L'épithète *ḥqꜣ mꜣʿ(.t)* et l'activité architecturale du début du règne autonome de Thoutmosis III", in A. Gasse, Fr. Servajean, Chr. Thiers (ed.), Et in Ægypto et ad Ægyptum, *Recueil d'études dédiées à Jean-Claude Grenier, CENiM* 5, 2012, p. 81-102.
- BISTON-MOULIN S., "Remarques sur la transformation des épithètes *nfr ḫpr(.w)* dans les cartouches du nom de naissance de Thoutmosis III", *ZÄS* 139/1, 2012, p. 19-27.
- BISTON-MOULIN S., THIERS Chr., ZIGNANI P., "Erster archäologischer Nachweis für Pharao Senachtenre Ahmose", *Antike Welt* 3/2012, 2012, p. 4.
- BROZE M., PREYS R., "Les noms "cachés" d'Amon : jeux de signes et rituels sur la porte ptolémaïque du deuxième pylône du temple de Karnak", in C. Zivie-Coche, I. Guermeur (ed.), *« Parcourir l'éternité ». Hommages à Jean Yoyotte, BEHESR* 156/1, 2012, p. 183-196.
- COULON L., "Une stèle déposée par un grand chef libyen près de la nécropole d'Osiris à Karnak", dans C. Zivie-Coche, I. Guermeur (ed.), *« Parcourir l'éternité ». Hommages à Jean Yoyotte, BEHESR* 156/1, 2012, p. 375-386.
- COULON L., "Le temple de Karnak : lieu de guérison. À propos d'une chapelle d'époque kouchite dédiée à Osiris sauveur", *Égypte Afrique et Orient* 67, 2012, p. 49-58.
- GABOLDE L., "Le parvis et la porte du IVe pylône à Karnak : Considérations sur une chapelle et des obélisques", in C. Zivie-Coche, I. Guermeur (ed.), *« Parcourir l'éternité ». Hommages à Jean Yoyotte, BEHESR* 156/1, 2012, p. 459-482
- GHILARDI M., TRISTANT Y., BORAIK M., "Nile River evolution in Upper Egypt during the Holocene: palaeoenvironmental implications for the Pharaonic sites of Karnak and Coptos. Évolution du Nil en Haute Égypte au cours de l'Holocène : implications paléoenvironnementales sur les sites pharaoniques de Karnak et Coptos", *Géomorphologie : relief, processus, environnement* janvier-mars n° 1, 2012, p. 7-22.
- GRAHAM A., "Investigating the Theban West Bank floodplain", *Egyptian Archaeology* 41, 2012, p. 21-24.
- GRAHAM A., STRUTT K.D., "The Theban Harbours and Waterscapes Survey. Recent Fieldwork to Investigate the Canals and Harbours on the West and East Banks at ancient Thebes (Luxor), Egypt", *ISAP News* 31, 2012, p. 6-7.

- GRAHAM A., STRUTT K.D., HUNTER M. *et al.*, "Reconstructing Landscapes and Waterscapes in Thebes, Egypt", in W. Bebermeier, R. Hebenstreit, E. Kaiser, J. Krause (ed.), *Landscape Archaeology. Proceedings of the International Conference Held in Berlin, 6th – 8th June 2012*, *eTopoi* 3, 2012, p. 135-142: http://journal.topoi.org/index.php/etopoi/article/ view/98/128
- LE BOHEC, MILLET M., "Karnak. Le temple d'Amon. Étude de la poterie et des contextes stratigraphiques de la cour nord du IVe pylône", *BCE* 23, 2012, p. 147-170.
- MILLET M., MASSON A., "Karnak: Settlements", dans W. Wendrich (ed.), *UCLA Encyclopedia of Egyptology*, Los Angeles, 2011: http://escholarship.org/uc/item/1q346284 - page-1
- RAGAZZOLI C., E. FROOD E., "Writing on the wall: two graffiti projects in Luxor", *Egyptian Archaeology* 42, 2013, p. 30-33.
- THIERS Chr., "Un montant de naos au nom d'Amasis consacré au dieu Ptah", in C. Zivie-Coche, I. Guermeur (éd.), *« Parcourir l'éternité ». Hommages à Jean Yoyotte, BEHESR* 156/2, 2012, p. 981-989.
- WINAND J., BROZE M., PREYS R., "L'activité épigraphique belge dans le temple de Karnak", in L. Bavay, M.-C. Bruwier, W. Claes, I. de Strooper (ed.), *Ceci n'est pas une pyramide... - Un siècle de recherche archéologique belge en Égypte*, Louvain, Paris, 2012, p. 92-105
- ZIGNANI P., "Les couvertures plates des temples égyptiens : Le projet du toit du monde", in R. Gargiani (dir.), *L'architrave le plancher la plate-forme. Nouvelle histoire de la construction*, Lausanne, 2012, p. 18-22

5.2. Forthcoming publications (2013)

- *Cahiers de Karnak* 14, table of contents:

M. Azim, A. Cabrol†, A. Dobrakowski, L. Gabolde, "Les mystères d'un sphinx"

M. Boraik, "The Sphinx Avenue Excavations. Second Report"

M. Boraik, "A Roman Bath at Karnak Temples. A preliminary Report"

M. Boraik, S. el-Masekh, A.-M. Guimier-Sorbets, B. Redon, "Ptolemaic Baths in front of Karnak temples - Recent Discoveries (season 2009-2010)"

M. Boraik, M. Naguib, "A Ceramic Material from the Ptolemaic Baths Excavations in front of Karnak Temples"

P. Brand, J. Revez, "Epigraphic survey of the columns of the Great Hypostyle Hall"

J.-Fr. Carlotti, Ph. Martinez, "Nouvelles observations architecturales et épigraphiques sur la grande salle hypostyle du temple d'Amon-Rê à Karnak"

R. David, "La céramique d'un habitat du Ve siècle à Karnak"

S. Cincotti, "Les fouilles dans le Musée : la collection égyptienne de Turin et le Fonds Rifaud"

R. David, "La céramique d'un habitat du Ve siècle à Karnak"

C. Defernez, "Remarques à propos de quelques vases-bès découverts à Karnak"

D. Devauchelle, Gh. Widmer, "Un *hiereus* en écriture démotique à Karnak"

A. Gaber, "Aspects of the Deification of King Sety I"

L. Gabolde, "Remarques sur le chemisage des obélisques de la Ouadjyt et sa datation"

J. Hourdin, "À propos de la chapelle d'Osiris-Padedankh de Chapenoupet II. Un apport à sa reconstitution épigraphique et architecturale"

D. Lorand, "Une 'Chapelle des Ancêtres' à Karnak sous Sésostris Ier ?"

Chr. Thiers, "*Membra disiecta ptolemaica* (II)"

P. Zignani, Chr. Thiers, "Le domaine de Ptah à Karnak. Premières données de terrain"

- THIERS Chr. (ed.), *Documents de Théologies Thébaines Tardives* (*D3T* 2), *CENiM* 8, Montpellier, 2013.
- CARLOTTI J.-Fr., GABOLDE L., PILLET M. (†), GRAINDORGE C., MARTINEZ Ph., GOUT J.-Fr., *Les monuments d'Amenhotep Ier à Karnak* I. *La chapelle de calcite d'Amenhotep Ier et Thoutmosis Ier*, *Travaux du CFEETK*, *BiGén*, Cairo, forthcoming.

5.3. Lectures

- 9/03/2012, École Polytechnique Fédérale de Lausanne, Unité d'enseignement Architecture et archéologie (Prof. Ortelli), P. Zignani, "L'architecture pharaonique".
- 14/03/2012, École Nationale Supérieure d'Architecture de Clermont Ferrand, P. Zignani, "Enseignements de l'architecture de l'Égypte pharaonique".
- 20/03/2012, Université Paris IV-Sorbonne, séminaire de Master, Chr. Thiers, "Le temple de Ptah à Karnak".
- 19/04/2012, Service des antiquités de Saqqâra, projet de gestion de site financé par l'AFD ("Enhancing the Value of Saqqara Archaeological Site"), P. Zignani, "The contribution of the understanding of the Pharaonic construction design in the scenarios of touristic visitations".
- 18/05/2012, École Polytechnique Fédérale de Lausanne, Unité d'enseignement Architecture et archéologie (Prof. Ortelli), P. Zignani, Séminaire conclusif des travaux d'étudiants sur la conservation des vestiges.
- 06/06/2102, Association des guides de Louqsor, Chr. Thiers, "Le secteur Nord de l'enceinte d'Amon-Rê à Karnak. Travaux récents du CFEETK".
- 06-09/06/2012, *Second International Landscape Archaeology Conference 2012, Freie Universität Berlin, 6-9 June 2012*, A. Graham : "Reconstructing Eternal Landscapes in Thebes, Egypt".
- 01/10/2012, Auditorium du Louvre, M. Boraik, "Fouilles récentes du Conseil Suprême des Antiquités à Louxor".

- Colloque « *Thebes in the First Millenium B.C.* », South Asasif Conservation Project and Minister of State for Antiquities, from 1 to 4 october 2012 ; octobre 4th devoted to CFEETK work (visits on the field and lectures):

  - Chr. Thiers, P. Zignani, N. Licitra, "A major development project of the Northern area of the Amun-Ra precinct at Karnak during the reign of Shabaka";
  - L. Coulon, "The building activity of the God's Wives of Amun at Karnak during the XXVIth dynasty. New data from recent excavations and unexploited archives";
  - A. Masson, "Offering Magazines on the Southern Bank of the Sacred Lake in Karnak: A possible reconstruction of the Architectural Phases of the XXVth and XXVIth Dynasty";
  - C. Defernez, S. Boulet, "Ceramic Production in the Theban Area from the XXVth and XXVIth Dynasties: about new discoveries in Karnak";
  - E. Frood, "The development of graffiti practices in Karnak in the early first millennium B.C.: the case-study of the temple of Ptah";
  - M. Boraik, "The XXVth Dynasty activity in front of the Karnak Temples".

6. Members of the CFEETK

6.1. MSA permanent members

- Boraik M.	Co-director of the CFEETK, general director of Luxor and Upper Egypt
- Soleiman I.	General Director of the temples of Karnak and Luxor
- Ammar A.	Director of Kanak temples
- Milad Zikri T.	Chief architect of Upper Egypt
- Abd el Nasser.	Chief conservator
- Abd Al Sattar B.	Chief inspector
- Halmi F.	Chief inspector
- Fathi M.	Chief inspector
- El-Balal F.	Chief inspector
- Gharib T.	Inspector
- Abd El Ghassul M.	Draftsman
- Zaki R.	Draftsman
- Louiz M.	Documentation officer
- Dowi Abd Al-Radi K.	Photographer
- Saidi M.	Photographer
- Fouad E.	Secretary

6.2. CNRS permanent members

- Thiers Chr.	Director of the USR 3172, co-director of the CFEETK, Egyptologist
- Biston-Moulin S.	Documentalist-egyptologist
- Garric A.	Stone-cutter
- Gout J.-Fr.	Photographer till April 2012
- Puelle V.	Administrator
- Zignani P.	Architect-archæologist

6.3. Associated members

Non permanent Egyptian inspectors

- Abu El Fadel A.
- Al Nubi M.
- Al Tawab H.
- Edrees B.
- El Masekh S.
- Essam N.
- Youssef Belal W.
- Shafi H.

International Volunteers (French Ministry of Foreign and European Affairs)

- Pieri L.	Restorer
- Peyroux A.	Topographer

Cnrs trainees and contracts 2012

- Amami L.	Archæologist
- Asperti A.	Conservator
- Calassou P.	Egyptologist
- Facon S.	Egyptologist
- Hauduroy A.-Cl.	Conservator
- Hourdin J.	Egyptologist
- Labarta Ch.	Egyptologist
- Livaditis M.-C.	Archæologist
- Moulié L.	Photographer

- PEROT M. Architect
- PIETRI R. Egyptologist
- TOURVIELLE P. Architect
- VANPEENE M. Architect

from:
- University Paul Valéry Montpellier III
- University Lille III
- University Paris I Pantheon-Sorbonne
- University Paris VII-Diderot
- École du Louvre
- École Pratiques des Hautes Études, Paris
- École nationale supérieure de la photographique, Arles
- École d'architecture de Bordeaux

6.4. Associated researchers (field mission 2012)

BROZE M.	Egyptologist, Brussels	Gate of the IInd pylon
COULON L.	Egyptologist, Lyon	Osirian chapels
DEFERNEZ C.	Archæologist-ceramologist, Paris	Osirian chapels
FROOD E.	Egyptologist, Oxford	Hieratic graffiti (Ptah temple)
KARKOWSKI J.	Egyptologist, Warsaw	Central area ("Palace of Maat")
PAYRAUDEAU Fr.	Egyptologist, Cairo	Osirian chapels
LAROZE E.	Architect, Paris	Opet temple
LICITRA N.	Doctoral candidate, Egyptologist, Paris	Treasury of Shabaka
MASSON A.	Egyptologist, London	Priests' quarter
PREYS R.	Egyptologist, Leuven	Gate of the IInd pylon
VAN SICLEN Ch.	Egyptologist, San Antonio	Courtyard of the IXth pylon

7. ACADEMIC COLLABORATIONS

France:
- UMR 5140 – Univ. Montpellier III (LabEx Archimede)
- USR 3134 – Centre d'études alexandrines (CeAlex)
- UMR 8167 – Univ. Paris IV Sorbonne
- UMR 5189 – HiSoma Univ. Lyon II
- UMR 6635 – Cerege Univ. Aix-Marseille
- UMR 8164 – Halma-Ipel Univ. Lille III
- UMR 5607 – Institut Ausonius Univ. Bordeaux III
- École Pratique des Hautes Études (Sciences religieuses), Paris
- Institut français d'archéologie orientale (Ifao)
- École nationale des sciences géographiques (ENSG) / IGN

Other countries:
- American Research Center in Egypt (ARCE)
- Chicago House (Luxor)
- Univ. Libre de Bruxelles
- Univ. of Quebec (Montreal)
- Univ. of Memphis (Tenessee)
- Univ. of Cambridge
- University College (London)
- Univ. of Oxford
- Univ. of Basel
- Univ. of Warsaw
- Museum of Geneva